

APPENDIX A

SENSITIVE ENVIRONMENTS

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ACRONYMS IN APPENDIX A

BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BTAG	Biological Technical Assistance Group
CFR	Code of Federal Regulations
EIS	environmental impact statement
HRS	Hazard Ranking System
MMS	Minerals Management Service
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NWI	National Wetlands Inventory
OSM	Office of Surface Mining
OWRS	Office of Water Regulations and Standards
SAV	submerged aquatic vegetation
SCS	Soil Conservation Service
TDL	target distance limit
USC	U. S. Code
USFS	U. S. Forest Service
USFWS	U. S. Fish and Wildlife Service
USGS	U. S. Geological Survey

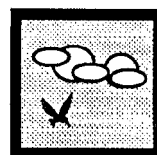
SECTION A.1

PATHWAY-SPECIFIC

ELIGIBILITY

REQUIREMENTS FOR

SENSITIVE ENVIRONMENTS



The Hazard Ranking System (HRS) evaluates environmental threat only for a specified set of targets (i.e., sensitive environments) that meet certain criteria. With some pathway-specific exceptions, sensitive environments located partially or wholly within the target distance limit (TDL) for the surface water, soil exposure, and/or air pathway(s) are eligible targets. Two key steps to evaluate an area as a sensitive environment in the HRS are (1) determine if the area meets HRS criteria for one or more sensitive environments, and (2) delineate boundaries of the area eligible for scoring with respect to the pathway being evaluated. Sensitive environments include:

- Those defined and delineated by statute (e.g., National Parks, Designated Federal Wilderness Areas);
- Those that meet a particular classification (e.g., spawning areas critical for the maintenance of fish/shellfish species, habitat known to be used by a proposed Federal endangered species) or statutory definition (e.g., wetlands) but are not statutorily delineated.

Evaluating sensitive environments that fall into the first category is relatively straightforward, because the areas are officially designated and delineated. Evaluating environments that fall into the second category requires professional judgment both to determine if an area is eligible for scoring and to delineate the eligible area. This section provides descriptive criteria and examples to assist in evaluating sensitive environments in the latter category.

General pathway-specific eligibility requirements are listed below.

AIR PATHWAY

All portions of all sensitive environments at least partially within the TDL are eligible, with the following qualifier: terrestrial areas utilized for breeding by large or dense aggregations of animals are limited to those used by terrestrial vertebrate species.

SOIL EXPOSURE PATHWAY

Only terrestrial sensitive environments (as listed in HRS Table 5-5) that are at least partially on an area of observed contamination are eligible. Terrestrial portions of other sensitive environments, and portions of wetlands that are periodically out of water, may be eligible to be evaluated as a terrestrial sensitive environment (see Section 9.6).

SURFACE WATER PATHWAY

All surface water (and wetland) portions of the sensitive environment at least partially within the TDL for a watershed are eligible to be evaluated for that watershed. Circumstances under which

terrestrial sensitive environments or terrestrial portions of a sensitive environment are eligible are illustrated in **Highlight A-1** and described below.

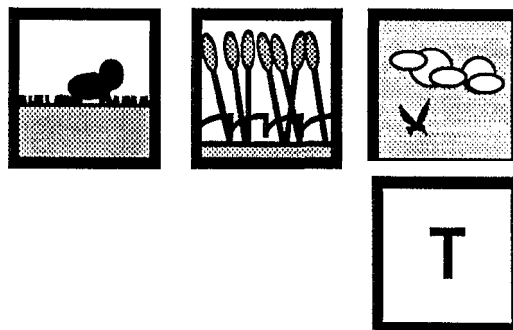
- Terrestrial sensitive environments that are not defined by the presence of one or more particular species (e.g., wildlife refuges) and whose boundaries cross or border a surface water body within the TDL for a watershed are eligible to be evaluated for that watershed.
- Terrestrial sensitive environments that are defined by the presence of one or more particular species (e.g., habitat known to be used by an endangered or threatened species, terrestrial areas used for breeding by large or dense aggregations of animals) and whose boundaries cross or border a surface water body within the TDL for a watershed are eligible to be evaluated for the watershed unless there is clear information that the particular species of concern is unlikely to come into contact with the surface water body or bodies within the TDL. Examples include terrestrial plant species not located in floodplains and terrestrial animal species that rarely or never drink water.
- Terrestrial sensitive environments that are defined by the presence of one or more particular species and whose boundaries do not cross or border a surface water body within the TDL are eligible to be evaluated for that watershed only if there is clear information that the particular species of concern is likely to come into contact with the surface water body or bodies within the TDL. Examples of such information include evidence that grouse from a display ground some distance from water regularly use a surface water body within the TDL for drinking or bathing; evidence that a bald eagle nesting several miles from water is known to forage in a surface water body within the TDL (note that such evidence probably would be sufficient to demonstrate that the surface water body was habitat known to be used by the bald eagle).

HIGHLIGHT A-1

ELIGIBILITY REQUIREMENTS FOR EVALUATING TERRESTRIAL SENSITIVE ENVIRONMENTS IN SURFACE WATER PATHWAY

Area Delineated by Presence of One or More Species	Boundary of Area Crosses or Borders Surface Water Body within TDL	Eligibility Requirements
Yes	Yes	Eligibility unless species of concern is unlikely to contact surface water within TDL
	No	Not eligible unless species of concern is likely to contact surface water within TDL
No	Yes	Always eligible
	No	Never eligible

SECTION A.2 DEFINITIONS OF SENSITIVE ENVIRONMENTS INCLUDING WETLANDS



This section defines all sensitive environments in HRS Tables 4-23 and 5-5, as well as wetlands. These definitions, presented in alphabetical order, are intended to assist the scorer in identifying sensitive environments that may be applicable to the surface water, soil exposure, or air pathway(s). Each definition includes a general section applicable to all pertinent pathways (i.e., surface water, soil exposure, and air), followed by a pathway-specific discussion. The statutory authority for designating the sensitive environment, where appropriate, also is included. *Highlight A-2* defines key terms used in defining sensitive environments. This section also includes a discussion of the relationship between wetlands definitions used by the U.S. Fish and Wildlife Service (USFWS) and the HRS.

HIGHLIGHT A-2 KEY TERMS USED IN DEFINING SENSITIVE ENVIRONMENTS

Aquatic Vertebrate Species: Vertebrate species that lay eggs or bear young in water. Includes all fishes, nearly all amphibians, and a few mammals (i.e., manatees, whales, porpoises).

Recognized Expert: A university professor or member of a professional society in a discipline such as ornithology, herpetology, ichthyology, entomology, or botany. The individual also must have authored at least one peer-reviewed scientific publication on the geographic area or species of concern.

Species Habitat: The place where a population of a species normally lives and its surrounding area, both living and nonliving. Habitat generally is characterized by dominant plant form (e.g., broadleaf deciduous forest) and/or physical characteristics (e.g., fast-moving stream with rocky substrate).

Species Range: The geographic extent over which a species occurs, including areas that comprise suitable habitat as well as those that do not. Current range is the geographic extent over which the species occurs at present; historic range is the geographic extent over which the species occurred at some time in the past.

Terrestrial Vertebrate Species: Vertebrate species that lay eggs or bear young outside of water. Includes all reptiles, all birds, most mammals, and amphibians that lay their eggs in shaded, moist sites on land.

Vertebrate Species: Animals belonging to the Phylum Chordata Subphylum Vertebrata. Includes organisms in the Class Agnatha (e.g., lampreys), Class Chondrichthyes (e.g., sharks, rays), Class Osteichthyes (most living forms of fishes), Class Amphibia (e.g., frogs, toads, salamanders), Class Reptili (e.g., snakes, lizards, turtles, alligators), Class Aves (birds), and Class Mammalia (mammals).

Vertebrate Species with Semi-aquatic Habits: Vertebrate species that either breed in water but live primarily on land (e.g., many amphibians) or breed out of water but live primarily in water (e.g., waterfowl, turtles, alligators, seals). Species in the former category are termed aquatic species with semi-aquatic habits; species in the latter category are termed terrestrial species with semi-aquatic habits.

ADMINISTRATIVELY PROPOSED FEDERAL WILDERNESS AREA

General

Remote areas of undeveloped Federal lands proposed by U.S. Forest Service (USFS), National Park Service (NPS), USFWS, or the Bureau of Land Management (BLM) to become a Federal Wilderness Area based on their primeval character and influence, lack of permanent roads, and lack of permanent improvements or human habitation. Areas must be proposed in the *Federal Register* for Federal Wilderness Area status to meet this definition. Areas already designated by Congress as Federal Wilderness Areas are considered a separate sensitive environment in the HRS (see subsection below, Designated Federal Wilderness Area). Statutory Authority: National Wilderness Preservation Act (16 U.S.C. § 1131, *et seq.*).

Pathway Specific

- Air - General eligibility requirements apply.
- Soil exposure - General eligibility requirements apply.
- Surface water - General eligibility requirements apply.

AREAS IDENTIFIED UNDER THE COASTAL ZONE MANAGEMENT ACT

General

Areas of coastal waters, the Great Lakes, and their connecting waters identified in state Coastal Zone Management Plans as requiring protection because of their ecological value. The following areas meet this definition for HRS purposes:

- Areas designated by the Secretary of Commerce as a National Estuarine Research Reserve (proposed areas are not eligible).
- Areas (identified in the Act) designated as of particular concern in a final State Coastal Zone Management Plan that has been approved by the National Oceanic and Atmospheric Administration (NOAA):
 - Areas of unique, scarce, fragile, or vulnerable habitat.
 - Areas of high natural productivity or essential habitat for living resources, including fish, wildlife, endangered species, and the various trophic levels in the food web critical to their well-being.
 - Areas needed to protect, maintain, or replenish coastal lands or resources, including coastal flood plains, aquifers and their recharge areas, estuaries, sand dunes, coral and other reefs, beaches, offshore sand deposits, and mangrove stands.
- Areas proposed, designated, or otherwise identified in draft plans that have not been approved by NOAA are not eligible for HRS purposes. Moreover, areas designated as of particular concern for reasons (defined by the Act) other than their ecological value do not meet this definition. Examples include areas of urban concentration where shoreline utilization and water uses are highly competitive and areas where developments and facilities are dependent upon the utilization of or access to coastal waters. Note that some National Estuarine Research Reserves were formerly designated as National Estuarine Sanctuaries. Statutory Authority: Coastal Zone Management Act (16 U.S.C. § 1451, *et seq.*; 15 CFR 921, *et seq.*; 15 CFR 923, *et seq.*)

Pathway Specific

- Air - General eligibility requirements apply.
- Soil exposure - Category is not evaluated.
- Surface water - General eligibility requirements apply.

COASTAL BARRIER - PARTIALLY DEVELOPED

General

Coastal barriers that are no more than 50 percent developed and that are not designated as units of the Coastal Barrier Resources System. A coastal barrier is a depositional geologic feature (e.g., a bay barrier, tombolo, barrier spit, or barrier island) that consists of unconsolidated sedimentary materials; is subject to wave, tidal, and wind energies; and protects landward aquatic habitats from direct wave attack. The coastal barrier includes all associated aquatic habitats, including the adjacent wetlands, marshes, estuaries, inlets, and nearshore waters. Under the Coastal Barrier Resources Act, a coastal barrier is considered partially developed if no more than 50 percent of the fastland area (i.e., the area between the landward and shoreward sides of the barrier) is covered by one or more man-made structures (i.e., walled and roofed buildings constructed in conformance with legal requirements, with a projected ground area exceeding 200 square feet) per 5 acres of fastland area. A coastal barrier that is more than 50 percent developed is not eligible for evaluation as a partially developed coastal barrier. Partially developed coastal barriers that are designated as units of the Coastal Barrier Resources System are considered a separate sensitive environment for HRS purposes (see subsection below, Coastal Barrier - Undeveloped). **Highlight A-3** summarizes criteria for determining the appropriate HRS sensitive environments category for a coastal barrier. Statutory Authority: Units of the Coastal Barrier Resource System are designated under the Coastal Barrier Resources Act (16 U.S.C. § 3501, *et seq.*); coastal barriers that meet the definition for this sensitive environment are not statutorily defined.

Pathway Specific

- Air – General eligibility requirements apply.
- Soil exposure – Category is not evaluated.
- Surface water – General eligibility requirements apply.

COASTAL BARRIER - UNDEVELOPED

General

Undeveloped coastal barriers that are not designated as units of the Coastal Barrier Resources System. A coastal barrier is a depositional geologic feature (e.g., a bay barrier, tombolo, barrier spit, or barrier island) that consists of unconsolidated sedimentary materials; is subject to wave, tidal, and wind energies; and protects landward aquatic habitats from direct wave attack. The coastal barrier includes all associated aquatic habitats, including any adjacent wetlands, marshes, estuaries, inlets, and/or nearshore waters. Under the Coastal Barrier Resources Act, the definition of an undeveloped barrier varies according to whether the entire barrier is being considered or only a portion is being considered. If the entire barrier is being considered, it must contain (on average) fewer than one man-made structure (i.e., a walled and roofed building constructed in conformance with legal requirements, with a projected ground area exceeding 200 square feet) per 5 acres of fastland area (i.e., the area between the landward and shoreward sides of the barrier). If only a portion of the barrier is being considered, the portion must have at least 1/4-mile of undeveloped shoreline on the shoreward side of the coastal barrier, and the undeveloped area must extend through the fastland from the beach to the associated landward aquatic habitat. Undeveloped coastal barriers that are designated as units of the Coastal Barrier Resources System are considered a separate sensitive environment for HRS purposes (see subsection above, Coastal Barrier – Partially Developed). See **Highlight A-3** for a summary of criteria for determining the appropriate HRS sensitive

HIGHLIGHT A-3 DETERMINING HRS CATEGORIES FOR COASTAL BARRIER

Description		HSR Category
Area designated as a Unit of the Coastal Barrier Resources System		Unit of Coastal Barrier Resources System
"Otherwise Protected" area depicted on Coastal Barrier Resources System maps		Not eligible unless it can be classified as partially developed or undeveloped coastal barrier
Area not designated as a Unit of the Coastal Barrier System	Entire barrier -- fewer than one man-made structure per 5 acres of fastland area	Coastal Barrier (Undeveloped)
	Portion of barrier -- at least 1/4-mile of undeveloped shoreline on the shoreward side, with the undeveloped area extending through the fastland area from the beach to the associated landward aquatic habitat	
	No more than 50 percent of fastland area covered by one or more man-made structures per 5 acres of fastland area	Coastal Barrier (Partially Developed)
	At least 50 percent of fastland area covered by one or more man-made structures per 5 acres of fastland area	Not eligible

environments category for a coastal barrier. Statutory Authority: Units of the Coastal Barrier Resource System are designated under the Coastal Barrier Resources Act (16 U.S.C. § 3501, *et seq.*); coastal barriers that meet the definition of this sensitive environment are not statutorily defined.

Pathway Specific

- Air - General eligibility requirements apply.
- Soil exposure - Category is not evaluated.
- Surface water - General eligibility requirements apply.

CRITICAL AREAS IDENTIFIED UNDER THE CLEAN LAKES PROGRAM

General

Subareas within publicly owned lakes, or in some cases entire, small, publicly owned lakes, identified in State Clean Lakes Plans as critical habitat under the Clean Water Act (commonly referred to as the section 305(b) report). Each state is required to submit: a Clean Lakes plan to receive grant assistance under section 314 of the Clean Water Act. Statutory Authority: section 314 of the Clean Water Act (33 USC § 1324).

Pathway Specific

- Air - General eligibility requirements apply.
- Soil exposure - Category is not evaluated.
- Surface water - General eligibility requirements apply.

CRITICAL HABITAT FOR FEDERAL DESIGNATED ENDANGERED OR THREATENED SPECIES

General

Habitat designated by the Secretary of the Interior as critical to the survival of an endangered or threatened species. Only those areas listed in 50 CFR 17.95 (critical habitats for fish and wildlife species) or 17.96 (critical habitats for plant species) meet this definition for HRS purposes; areas proposed as critical habitat do not meet this definition. Other habitat areas known to be used by the species are considered a separate sensitive environment in the HRS (see). Note that critical habitat has not been designated for all endangered or threatened species. Statutory Authority: Endangered Species Act (16 U.S.C. § 1531, *et seq.*; 50 CFR 424.02).

Pathway Specific

- Air - General eligibility requirements apply.
- Soil exposure - Category is evaluated for the soil exposure pathway only if the designated critical habitat includes one or more terrestrial areas within an area of observed contamination.
- Surface water - Category is evaluated only if the designated critical habitat includes one or more surface water bodies within the TDL.

DESIGNATED FEDERAL WILDERNESS AREA

General

Remote areas of undeveloped Federal land designated by an act of Congress as a Federal Wilderness Area based on their primeval character and influence and lack of permanent roads, improvements, or human habitation. Federal Wilderness Areas are administered either by the USFS, NPS, USFWS, or BLM. Proposed Federal Wilderness Areas are considered a separate sensitive environment in the HRS. Statutory Authority: National Wilderness Preservation Act (16 U.S.C. § 1131, *et seq.*).

Pathway Specific

- Air - General eligibility requirements apply.
- Soil exposure - General eligibility requirements apply.
- Surface water - General eligibility requirements apply.

FEDERAL DESIGNATED SCENIC OR WILD RIVER

General

Rivers or segments of rivers (and the related adjacent land area) that are (1) designated as National Wild and Scenic Rivers by an act of Congress or the Secretary of the Interior based on their degree of free-flow; lack of development; and the outstanding scenic, natural, and cultural characteristics of the segments and their surrounding environments and (2) classified as wild or scenic. Under the Wild and Scenic Rivers Act, segments are designated wild because they are free of impoundments and generally accessible only by trail, with essentially primitive watersheds or

shorelines, and unpolluted waters. Segments are designated scenic because they are free of impoundments, with shorelines or watersheds still largely undeveloped, but accessible in places by roads. Administering agencies and the conditions under which a river segment is designated a National Wild and Scenic River are listed under National River Reach Designated as Recreational. Note that National Wild and Scenic Rivers may be classified either as wild, scenic, or recreational; segments classified as recreational are considered a separate sensitive environment in the HRS (see subsection below, National River Reach Designated as Recreational). River segments designated by a state as wild or scenic, but not included in the national system, also are considered a separate sensitive environment in the HRS (see subsection below, State Designated Scenic or Wild River). **Highlight A-4** summarizes criteria for determining the appropriate HRS sensitive environments category for a wild or scenic river. Statutory Authority: National Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287).

Pathway Specific

- Air – General eligibility requirements apply.
- Soil exposure – Category is not evaluated.
- Surface water – General eligibility requirements apply.

FEDERAL LAND DESIGNATED FOR THE PROTECTION OF NATURAL ECOSYSTEMS

General

This sensitive environment includes two types of areas: (1) public lands designated by an appropriate Federal Agency (e.g., USFS, BLM, Bureau of Indian Affairs (BIA), Minerals Management Service (MMS), Office of Surface Mining (OSM)) in a relevant document as an area for protecting natural ecosystems (e.g., a BLM Area of Critical Environmental Concern), and (2) public lands established as Wildlife Mitigation Areas in accordance with an environmental impact statement (EIS) for Federal land. Statutory Authority: sections 103(a) and 202(c)(3) of the Federal Land Policy and Management Act (43 U.S.C. §§ 1702(a), 1712(c)(3)).

HIGHLIGHT A-4 HRS CATEGORIES FOR WILD AND SCENIC RIVERS

Designation	Classification	HRS Category
National Wild and Scenic River	Recreational	National River Reach Designated as Recreational
	Wild	Federal Designated Scenic or Wild River
	Scenic	Federal Designated Scenic or Wild River
State Scenic River or State Wild River not included in National Wild and Scenic River System		State Designated Scenic or Wild River
State Scenic River or State Wild River included in National Wild and Scenic River System		National River Reach Designated as Recreational or Federal Designated Scenic or Wild River, as appropriate (see above)

Pathway Specific

- Air – General eligibility requirements apply.
- Soil exposure – General eligibility requirements apply.
- Surface water – General eligibility requirements apply.

HABITAT KNOWN TO BE USED BY FEDERAL DESIGNATED OR PROPOSED ENDANGERED OR THREATENED SPECIES

General

Areas known to be used by a species designated or proposed for designation by the Secretary of the Interior as endangered or threatened by listing in 50 CFR 17.11 (fish and wildlife), listing in 50 CFR 17.12 (plants), or notification in the *Federal Register*. Definition does not include those areas that are designated as critical habitat for the endangered or threatened species; such areas are considered a separate sensitive environment in the HRS. To evaluate this sensitive environment, provide evidence that at least one member of the species is present in and is using the habitat within the TDL. Field survey evidence (not necessarily direct sightings) should be sufficient to conclude that the species would likely be found in the habitat. Note that evidence of presence but not use, (e.g., sighting an individual member of a species flying over the habitat) generally will not be sufficient. Examples of sufficient evidence include (but are not limited to):

- A recent sighting (e.g., within the past five years) has been made by a representative of an appropriate Federal, state, county, or local agency (e.g., USFWS, National Marine Fisheries Service (NMFS), state fish and game department, state Natural Heritage program) or by a recognized expert, preferably written on official letterhead, of at least one individual member of the species within and using the area of concern.
- A written statement from a representative of an appropriate Federal, state, county, or local agency, or from a recognized expert indicates that the area of concern is suitable habitat for and is within the current range of the species in question.
- Evidence from a published document or logbook indicates that the area of concern is suitable habitat for and is within the current range of the species of concern. Only original, primary sources are suitable; secondary sources such as an EIS are not. For example, a statement in an EIS that an endangered species was seen using the surface water body during a site survey is not sufficient evidence; the logbook or original notes of the individual making the observation may be sufficient evidence. Statutory Authority: endangered and threatened species are designated or proposed under the Endangered Species Act (15 U.S.C. § 1531, *et seq.*); habitat known to be used by these species is not statutorily defined.

Pathway Specific

- Air – Document suitable terrestrial or aquatic habitat and current range of the species within the TDL.
- Soil exposure – It generally will be sufficient to document suitable terrestrial habitat and current range or the presence of the species within at least one area of observed contamination. Evidence will be strengthened by documenting that the species spends all or a considerable portion of its time in direct contact with surface soils (e.g., plants, snakes, burrowing mammals) or consumes such organisms (e.g., birds that eat worms, owls or hawks that eat small rodents).
- Surface water – For aquatic species (e.g., fish, whales) or aquatic species with semi-aquatic habits (e.g., toads, salamanders), it generally will be sufficient to document

suitable habitat used by the species (e.g., for feeding or breeding) or the presence of the species within one or more surface water bodies (or wetlands) within the TDL. For terrestrial species with semi-aquatic habits (e.g., herons, mink), it generally will be necessary to document that the species of concern is likely to come into contact with one or more surface water bodies within the TDL (e.g., the species consumes fish or other aquatic organisms that might inhabit the surface water body or drinks water from similar types of surface water bodies). Habitat used by terrestrial species that are unlikely to contact surface water within the TDL is generally not eligible (e.g., terrestrial plant species not located in floodplain areas, terrestrial animal species that rarely or never drink water).

HABITAT KNOWN TO BE USED BY SPECIES UNDER REVIEW AS TO ITS FEDERAL ENDANGERED OR THREATENED STATUS

General

Areas known to be used by a species which the Secretary of the Interior has formally announced is under review as to its Federal endangered or threatened status by notification in the most recent Comprehensive Notice of Review (fish, wildlife, and plant species) or Candidate Species List (marine animal species) published in the *Federal Register*. The USFWS publishes one Comprehensive Notice of Review each year with plant and animal species included in alternating years (e.g., animals were published in 1989, plants were published in 1990). NOAA publishes a candidate species list periodically, as needed. The definition of this sensitive environment category is identical to habitat known to be used by Federal designated endangered or threatened species, with the following exceptions:

- If the species of concern also is a state designated or proposed endangered or threatened species, evaluate the habitat either as habitat used by a state endangered or threatened species, or as habitat used by a species under review as to its Federal endangered or threatened status, but not as both, using the higher of the appropriate scores.
- For eligible species, this definition includes areas designated as critical or important habitat for the endangered or threatened species of concern, as long as it can be established that the species is present in and uses these areas.

Statutory Authority: Endangered Species Act (15 U.S.C. § 1531, *et seq.*).

Pathway Specific

- See subsection above, Habitat Known to be Used by Federal Designated Endangered or Threatened Species, for pathway-specific information.

HABITAT KNOWN TO BE USED BY STATE DESIGNATED ENDANGERED OR THREATENED SPECIES

General

Areas known to be used by a species designated as endangered or threatened within the state by the Governor, administering agency, or state legislature. The definition of this sensitive environment category is identical to habitat known to be used by Federal designated endangered or threatened species, with the following exceptions:

- If the species of concern also is a Federal designated or proposed endangered or threatened species, the species should not be considered a state endangered or

threatened species for HRS purposes. Evaluate habitat known to be used by a Federal designated or proposed endangered or threatened species).

- Species that are proposed for designation as endangered or threatened by the state do not meet this definition for HRS purposes.
- For eligible species, this definition includes areas designated as critical or important habitat for the endangered or threatened species of concern.

Note that species listed as "significantly rare" or "of special concern" in the state are not eligible under this category unless they have been designated as endangered or threatened within the state. Statutory Authority: state endangered species laws.

Pathway Specific

- See subsection above, Habitat Known to be Used by Federal Designated Endangered or Threatened Species, for pathway-specific information.

MARINE SANCTUARY

General

Areas of coastal and ocean waters, the Great Lakes, and their connecting waters designated as a National Marine Sanctuary by the Secretary of Commerce based on their conservation, recreational, ecological, or aesthetic values. All National Marine Sanctuaries are administered by NOAA. Proposed National Marine Sanctuaries do not meet this definition for HRS purposes. Statutory Authority: Marine Protection Research and Sanctuaries Act (16 U.S.C. § 1431, *et seq.*; 15 CFR 922.1 and 15 CFR 922.2).

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

MIGRATORY PATHWAYS AND FEEDING AREAS CRITICAL FOR MAINTENANCE OF ANADROMOUS FISH SPECIES WITHIN RIVER REACHES OR AREAS IN LAKES OR COASTAL TIDAL WATERS IN WHICH THE FISH SPEND EXTENDED PERIODS OF TIME

General

Surface water bodies along or contiguous to the hazardous substance migration path that are identified by a representative of an appropriate Federal, state, county, or local agency or by a recognized expert as critical migratory pathways or feeding areas for anadromous fish species (i.e., species such as salmon and striped bass that spend most of their adult lives in the ocean but migrate to freshwater or low salinity coastal tidal waters for breeding). Only areas in which adult, juvenile, or larval forms of the species of concern spend prolonged periods of time meet this definition for HRS purposes. Appropriate agencies are limited to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) natural resource trustees (**Highlight A-5**) and state or local agencies that have statutory responsibility for or involvement in management of the area or species of concern (e.g., state fish and game departments). Provide the individual with the definitional criteria (i.e., as stated in HRS Table 4-23) to determine whether any surface water body or bodies within the TDL meets this definition. Obtain written documentation (on appropriate letterhead) that the area of concern is a critical migratory pathway and/or feeding area as well as some information about the species and habitats of concern (e.g., some explanation as to why the habitat is critical). Examples of appropriate documentation are provided in **Highlight A-6**. Statutory Authority: Not statutorily defined.

HIGHLIGHT A-5 CERCLA NATURAL RESOURCE TRUSTEES

Government Level	Designated Trustee	Delegated Trustee
Federal ^a	Secretary of the Interior Secretary of Commerce Secretary of Agriculture Secretary of Energy Secretary of Defense	USFWS USGS NPS MMS BLM Bureau of Indian Affairs Bureau of Reclamation NOAA Costal Resource Coordinators
State ^b	State official designated by the Governor	
Native American Tribes ^c	Tribal Chairman or head of the governing body of a tribe	Individual designated by Tribal Chairman or head of governing body BIA, if requested by tribe

^aBy Executive Order 12580, and in the National Contingency Plan (NCP), the President has designated the Secretary of the Departments of the Interior, Commerce, Agriculture, Energy, and Defense as Federal trustees for natural resources.

^b Superfund Amendments and Reauthorization Act (SARA) Section 107(d) requires each Governor to designate state trustees for natural resources within the boundaries of, belonging to, controlled by, or appertaining to the state; most Governors have done so.

^c Native American Tribes are trustees for resources on or related to tribal lands or for resources for which they may have treaty rights.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

NATIONAL LAKESHORE RECREATIONAL AREA

General

A lakeshore designated by an act of Congress as a National Lakeshore Recreational Area because of its recreational and ecological values. All National Lakeshore Recreational Areas are administered by NPS. Not all lakeshore areas administered by NPS (or other agencies) are designated National Lakeshore Recreational Areas. Statutory Authority: 16 U.S.C. § 1, *et seq.*

HIGHLIGHT A-6
APPROPRIATE DOCUMENTATION FOR
MIGRATORY PATHWAYS AND FEEDING AREAS CRITICAL FOR
MAINTENANCE OF ANADROMOUS FISH SPECIES WITHIN
RIVERS, LAKES, OR COASTAL TIDAL WATERS

Based on written statements from CERCLA Natural Resource Trustee Agency

Example 1: "Information from the [state fish and game department] that [identified surface water bodies] are moderately to heavily used by anadromous fishes for transportation and/or rearing. Substantial runs of [identified fish species] use these waters en route to or from upriver spawning grounds. [Identified surface water bodies] provide critical salt/fresh water transition habitat where [identified fish species] must acclimate before moving from one environment to the other. This site is near critical migratory pathways and feeding areas."

Example 2: "The [identified surface water body] in this area is a major migration and feeding area for salmon [referenced personal communication from representative of state fish and game department]. Anadromous species of concern are: [identified fish species]. The [identified fish species] is a candidate species for listing under the Endangered Species Act, and a petition for listing has been submitted for the [identified fish species]. This site is near a critical migratory pathway and feeding area."

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

NATIONAL MONUMENT

General

Areas designated by an act of Congress as National Monuments because of their cultural or historical significance. All National Monuments are administered by NPS. Not all lands administered by NPS are designated National Monuments. Statutory Authority: 16 U.S.C. § 1, et seq.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

NATIONAL OR STATE WILDLIFE REFUGE

General

Area designated for the protection of fish and wildlife, within which hunting and fishing are either prohibited or strictly controlled. National Wildlife Refuges are designated by an act of Congress or through Executive Order, by the President, and are administered by USFWS. State Wildlife Refuges are designated by a state Governor, administrative agency, or legislature, and are administered by the appropriate state agency. Proposed National and State Wildlife Refuges do not meet this definition for HRS purposes. Statutory Authority: National Wildlife Refuge Administration Act of 1966 (16 U.S.C. §§ 668dd-668ee) or comparable state law.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — General eligibility requirements apply.
- Surface water — General eligibility requirements apply.

NATIONAL PARK

General

Area designated by an act of Congress as a National Park for purposes of protection and recreation based on its uniqueness, natural, historic, or cultural values. All National Parks are administered by NPS. Not all lands administered by NPS are designated as National Parks. Statutory Authority: 16 U.S.C. § 1, *et seq.*

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — General eligibility requirements apply.
- Surface water — General eligibility requirements apply.

NATIONAL PRESERVE

General

Area designated by an act of Congress as a National Preserve because of its unique flora and fauna. All National Preserves are administered by NPS. Not all areas administered by NPS (or other agencies) are designated National Preserves. Statutory Authority: 16 U.S.C. § 1, *et seq.*

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — General eligibility requirements apply.
- Surface water — General eligibility requirements apply.

NATIONAL RIVER REACH DESIGNATED AS RECREATIONAL

General

Rivers or segments of rivers (and the related adjacent land area) that are both (1) designated as National Wild and Scenic Rivers by an act of Congress or the Secretary of the Interior based on their degree of free-flow, lack of development, and the outstanding scenic natural and cultural characteristics of the segments and their surrounding environments and (2) classified as recreational. Under the Wild and Scenic Rivers Act, segments are classified as recreational because they are readily accessible by road or railroad, may have some development along their shoreline, and may have undergone some impoundment or diversion in the past. The Secretary of the Interior can designate a river segment as a National Wild and Scenic River only if the river has been designated "wild and scenic" by one or more state(s). To obtain designation the Governor of the state(s) submits an application to the Secretary, the Secretary determines that the river has the necessary outstanding values to meet the criteria for inclusion in the National Wild and Scenic Rivers System, and the Secretary determines that the state(s) will protect these values. National Wild and Scenic Rivers are administered either by a Federal agency (i.e., NPS, USFWS, USFS, or BLM), a state agency, or a Native American Tribe. Note that National Wild and Scenic Rivers may be classified either as wild, scenic, or recreational; segments classified as wild or scenic are considered a separate sensitive environment in the HRS (see subsection above, Federal Designated Scenic or Wild River). See **Highlight A-4** for a summary of criteria for determining the appropriate HRS sensitive environments

category for a wild or scenic river. Statutory Authority: National Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287).

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

NATIONAL SEASHORE RECREATIONAL AREA

General

Coastline designated by an act of Congress as a National Seashore Recreational Area because of its recreational and ecological values. All National Seashore Recreational Areas are administered by NPS. Not all coastal areas administered by NPS are designated National Seashore Recreational Area. Statutory Authority: 16 U.S.C. § 1, *et seq.*

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

PARTICULAR AREAS, RELATIVELY SMALL IN SIZE, IMPORTANT TO MAINTENANCE OF UNIQUE BIOTIC COMMUNITIES

General

Areas that are important for the maintenance of unique, rare, or otherwise ecologically valuable biotic communities. Eligible areas differ by pathway (see below). This definition generally includes but is not limited to the following four types of areas:

- Areas with a high proportion of species with highly restrictive habitat requirements due to unusual natural biotic and/or abiotic conditions;
- Highly isolated area that may or may not have an unusual community structure *per se*, but because of its geographic isolation is particularly important to the continued existence of that community;
- Areas with a high proportion of species that are locally endemic because of a relatively long period of geographic isolation and/or are exceptional examples of "climax" communities because of minimal human disturbance; or
- Areas vital for a species that are important to the maintenance of a community.

Statutory Authority: Not statutorily defined.

Pathway Specific

- Air — Eligible areas include those areas listed for the surface water and soil exposure pathways that are at least partially within the TDL.
- Soil exposure — Eligible areas are limited to terrestrial areas at least partially within an area of observed contamination. Examples of the first type of area may include riparian woodlands in arid/semi-arid areas; sand dunes and other coastal areas with

high salinity; high-altitude tundra; coastal pine barrens, and cove forests. Examples of the second type of area may include small patches of tall grass prairie within agricultural areas and old-growth forest areas. Examples of the third type of area may include "hammocks" of Florida and some mountain-top communities in arid/semi-arid areas. Examples of the fourth type of area may include traditional roosting areas for species important to a community (e.g., turkey vulture roosts). Note that communal roosts for other types of species (e.g., starlings, blackbirds) generally are not eligible.

- Surface water — Eligible areas include surface water bodies (including wetlands) located along the hazardous substance migration path for a watershed. Examples of the first type of area may include volcanic lakes, hot springs, salt lakes, alkali lakes, peat bogs, and bog lakes. Examples of the second type of area may include small water bodies or wetlands in otherwise dry areas (e.g., prairie potholes, playas, pocosins, vernal pools, wet meadows) or other unique surface water bodies (e.g., alligator holes). Note that other types of wetlands do not qualify under this category. Examples of the third type of area may include water bodies located in relatively ancient or remnant geological formations. Examples of the fourth type of area may include isolated surface water bodies in arid areas that are important amphibian breeding ponds.

SENSITIVE AREAS IDENTIFIED UNDER NATIONAL ESTUARY PROGRAM OR NEAR COASTAL WATERS PROGRAM

General

Subareas within estuaries or near coastal waters identified in state Comprehensive Conservation and Management Plans, filed with EPA, because they support critical life stages of key estuarine or coastal species. Statutory Authority: Sections 104(b)(3), 304(1), 319, and 320 of the Clean Water Act (33 U.S.C. §§ 1254(b)(3), 1314(1), 1329, and 1330).

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

SPAWNING AREAS CRITICAL FOR THE MAINTENANCE OF FISH/SHELLFISH SPECIES WITHIN RIVER, LAKE, OR COASTAL TIDAL WATERS

General

Areas that are used for intensive or concentrated spawning by fish or shellfish species and are identified by a representative of an appropriate Federal, state, county, or local agency or by a recognized expert as critical for the maintenance of fish or shellfish species within river, lake or coastal tidal waters. Appropriate agencies are limited to the natural resource trustees designated under CERCLA (see **Highlight A-5**) and state or local agencies that have statutory responsibility for or involvement in management of the area or species of concern (e.g., state fish and game departments), even if these agencies are not designated CERCLA natural resource trustees. The scorer should provide the appropriate agency representative or recognized expert with the definitional criteria (i.e., as stated in HRS Table 4-23) to determine whether any surface water body or bodies within the TDL meets this definition. Obtain written documentation (on appropriate letterhead) that the area of concern is a critical spawning area as well as some information about the species and habitat(s) of concern (e.g., some explanation as to why the habitat is critical). Examples of appropriate documentation are provided in **Highlight A-7**. Fish and shellfish spawning typically involves the release of gametes (ova and sperm) into the water column; however, species with internal fertilization are not necessarily excluded. Areas critical for the survival or maintenance of larval or

HIGHLIGHT A-7

APPROPRIATE DOCUMENTATION FOR SPAWNING AREAS CRITICAL FOR MAINTENANCE OF FISH/SHELLFISH SPECIES WITHIN RIVERS, LAKES, OR COASTAL TIDAL WATERS

Based on written statements from CERCLA Natural Resource Trustee Agency

Example 1: "Salmonid spawning is widespread; generally any tributary that is physically accessible within [water bodies within the TDL] is utilized for spawning by salmon and trout [literature citations]. As noted earlier, regionally heavy watershed development has impacted fish production capabilities of upstream tributaries. Also, it must be noted that the study area is a small percentage of the entire spawning habitat available, particularly for [specified water basins]. Further, these systems each have numerous small unnamed tributaries. As such, a large percentage of preferred spawning habitat is outside of the study area or unmentioned. Nonetheless, recognized important spawning tributaries for each sub-basin are identified as follows: [lists of specific rivers, creeks, and watersheds (or portions thereof) for three river basins]".

Example 2: "Wetland composition and distribution is similar to that found in the main basin [literature citation]. Unlike the main basin, larger areas of intertidal emergent habitat are evident particularly in [identified embayments]. These wetlands are characterized as excellent fish and invertebrate habitats noted for high productivity and value [literature citation]. Numerous freshwater, moderate gradient streams feed the [identified river basin]. Most are typical of lowland drainages: sand/gravel substrates, riffle/pool profiles, shallow depths, total lengths between 1-6 km, and high water quality; each highly conducive to productive anadromous fish habitat [literature citation]. Principal streams noted include: [identified creeks] [referenced personal communication]."

juvenile forms are not included in this definition unless they also are used by adults for spawning; such areas may qualify as feeding areas critical for maintenance of anadromous fish species (a separate HRS sensitive environment). Note that state, Federal, commercial, or other hatcheries or aquaculture facilities are not included and should be evaluated only under the human food chain threat. Statutory Authority: Not statutorily defined.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

STATE DESIGNATED AREAS FOR PROTECTION OF AQUATIC LIFE

General

Navigable waters (as defined by the Clean Water Act) listed by a state as adequate, or reasonably expected to be made adequate, to provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife pursuant to section 305 of the Clean Water Act. This designation is based solely on the classification assigned to the water body in the Section 305(a) Report and updated biennially in the Section 305(b) Report. The specific procedure for classifying these areas varies among states. Note that in some states, waters designated for drinking water use also are considered to be designated for protection of aquatic life and would be included in this category; in other states, waters classified for drinking water use are not automatically considered to be designated for the protection of aquatic life and would not be included in this category. The specific classification scheme must be determined on a state-by-state basis. Statutory Authority: sections 305(a) and (b) of the Clean Water Act (33 U.S.C. § 1315).

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

STATE DESIGNATED NATURAL AREAS

General

Areas designated by a state Governor, administrative agency, or legislature as a natural area based on their unique aesthetic, ecological, or recreational values. Statutory Authority: State laws.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — General eligibility requirements apply.
- Surface water — General eligibility requirements apply.

STATE DESIGNATED SCENIC OR WILD RIVER

General

Rivers or segments of rivers (and the related adjacent land area, if so designated) that are designated as wild and/or scenic by a state Governor, administrative agency, or legislature under an appropriate state law. Segments generally are designated as wild or scenic because of their degree of free-flow, lack of development, and the outstanding scenic, natural and cultural characteristics of the segment and their surrounding environments; however, specific criteria may vary among states. Note that state-designated wild or scenic rivers that have been included in the National Wild and Scenic Rivers System are considered Federal Wild and Scenic Rivers or National River Reaches Designated as Recreational for HRS purposes (see subsections above, Federal Designated Scenic or Wild River and National River Reach Designated as Recreational). See **Highlight A-4** for a summary of criteria for determining the appropriate HRS sensitive environments category for a wild or scenic river. Statutory Authority: State laws.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

STATE LAND DESIGNATED FOR WILDLIFE OR GAME MANAGEMENT

General

Land set aside or managed for the propagation and maintenance of wildlife or game under some type of state sponsorship and approval. Some of these areas are open on a limited basis to hunting and/or fishing, but this is not an eligibility criterion. As a general rule, eligible areas would include any land for which use for wildlife or game management can be altered only with state approval, and only under certain circumstances. Eligible areas include (but are not limited to) lands owned by a state and designated by the state Governor, legislature, or appropriate administrative agency for the propagation and maintenance of wildlife or game; lands leased by the state; privately owned lands maintained for eventual sale to the state; and state-owned lands that are privately managed. All Pittman-Robertson Preserves and some Nature Conservancy lands are eligible. Statutory Authority: State laws.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — General eligibility requirements apply.
- Surface water — General eligibility requirements apply.

TERRESTRIAL AREAS UTILIZED FOR BREEDING BY LARGE OR DENSE AGGREGATIONS OF ANIMALS

General

Terrestrial areas used for intensive or concentrated breeding by terrestrial vertebrate species. Eligible areas differ by pathway (see below). Evidence for the existence of this sensitive environment will be strengthened if the breeding habitat requirements (e.g., substrate, vegetation) of the species of concern is defined, suitable breeding habitat within the TDL is delineated, and it can be shown that the species typically nests or breeds in large colonies or dense aggregations. Examples of areas that may meet these criteria include heron or cormorant rookeries, beaches used for rearing young by seals or sea lions, and sand cliffs used by bank swallows. Only the areas utilized for breeding (i.e., nesting or brood rearing areas) meet this definition for HRS purposes; areas used solely for feeding (e.g., open fields near nest sites) are excluded. Note that eligible areas include areas used for breeding by seals, sea lions, turtles, and other vertebrates that spend most of their time in the water but breed on land. However, ponds and other surface water bodies used for breeding by amphibians and other aquatic vertebrate species with semi-aquatic habits do not meet this definition because these are not terrestrial areas. Note also that it is not necessary to demonstrate that these areas are critical for the maintenance of the species of concern. Statutory Authority: Not statutorily defined.

Pathway Specific

- Air — Eligible areas are limited to terrestrial areas that are at least partially within the TDL and are used by terrestrial vertebrate species. Eligible areas for this pathway include areas used for breeding by terrestrial vertebrates with semi-aquatic habits.
- Soil exposure — Eligible areas are limited to terrestrial areas that are at least partially within the area of observed contamination and are used for breeding by vertebrate species. Eligible areas include areas used for breeding by terrestrial vertebrates with semi-aquatic habits.
- Surface water — Eligible areas are limited to terrestrial areas that are located along or contiguous to the hazardous substance migration path and are used for breeding by terrestrial vertebrate species with aquatic or semi-aquatic foraging habits (i.e., birds, mammals, or reptiles that consume fish or other aquatic organisms that inhabit or might inhabit the surface water bodies within the TDL). Such species generally correspond to those defined as "terrestrial vertebrates with semi-aquatic habits" (see **Highlight A-2**).

UNIT OF COASTAL BARRIER RESOURCES SYSTEM

General

Coastal barriers (e.g., bay barrier, tombolo, barrier spit, or barrier island) selected by the Secretary of the Interior and designated by an act of Congress as a unit of the Coastal Barrier Resources System. Areas depicted as "otherwise protected" on the Coastal Barrier Resources System maps do not meet this definition for HRS purposes because they are not part of the System (these are areas held for conservation purposes under Federal, State, or local law, or by an organization primarily for conservation purposes). "Otherwise protected" areas may be eligible for evaluation as a separate sensitive environment in the HRS if they meet the definition of undeveloped and partially developed

coastal barriers (see subsections above, Coastal Barrier — Partially Developed and Coastal Barrier — Undeveloped). Maps that depict the Coastal Barrier Resources System are administered by USFWS. Statutory Authority: Coastal Barrier Resources Act (16 U.S.C. § 3501, *et seq.*).

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

WETLANDS

General

Wetlands generally include swamps, marshes, bogs, and similar areas. As defined in 40 CFR 230.3, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands can be natural or man-made. Wetlands identified using other definitions (e.g., the Food Security Act of 1985, the wetlands classification system of USFWS, the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands) are not eligible to be evaluated with the HRS unless they also meet the 40 CFR 230.3 definition. A discussion of the wetland classification system used on National Wetlands Inventory (NWI) maps and its relationship to the 40 CFR 230.3 definition is provided below.

Pathway Specific

- Air — General eligibility requirements apply.
- Soil exposure — Category is not evaluated.
- Surface water — General eligibility requirements apply.

Relationship between USFWS and 40 CFR 230.3 Wetland Definitions

The HRS uses the following definition of wetlands (40 CFR 230.3): *Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.* USFWS uses the following definition of wetlands (for NWI maps): *Lands that are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, and have one of the following three attributes: at least periodically, the land supports predominantly hydrophytes; the substrate is predominantly undrained hydric soil; and/or the substrate is nonsoil and is saturated with water or is covered by shallow water at some time during the growing season of each year.*

The primary difference between the HRS and USFWS definitions is that under the HRS definition, wetlands must, under normal circumstances, support a prevalence of rooted emergent hydrophytes. Hydrophytes are a sufficient, but not necessary, requirement for the USFWS definition. Areas that under normal circumstances do not support hydrophytes may be classified as a wetland by USFWS, but would not be classified as a wetland for HRS purposes.

USFWS describes five categories of wetlands. Two of these fall within the HRS definition of wetlands:

- Areas with hydrophytes and hydric soils (e.g., marshes, swamps, and bogs); and
- Areas where hydrophytes have become established but hydric soils have not yet developed (e.g., margins of impoundments or excavations).

Three other categories do not meet the HRS definition of wetlands:

- Areas without hydrophytes but with hydric soils (e.g., flats where drastic fluctuation in water level, wave action, turbidity, or high concentration of salts may prevent the growth of hydrophytes);
- Areas with hydrophytes but without soils (e.g., seaweed-covered portions of rocky shores); and
- Areas without hydrophytes and soils (e.g., gravel beaches or rocky shores without vegetation).

Deepwater habitats that support submerged aquatic vegetation (SAV) but not emergent vegetation do not fall within either the HRS or the USFWS definition. Although SAV is hydrophytic, it is not "vegetation typically adapted for life in saturated soil conditions" because substrates that support SAV but not emergent vegetation are considered nonsoil.

USFWS divides wetlands (and deepwater systems) into five categories based on salinity, tidal influence, and wave action. Hydrophytes and hydric soils exist in each of these categories:

- The marine system includes all wetlands that occur along the high energy coastline of the open ocean overlying the continental shelf. Salinities exceed 30 parts per thousand (ppt), with little or no dilution except near the mouths of estuaries.
- The estuarine system includes all wetlands in areas, partially enclosed by land, with open, partly obstructed, or sporadic access to marine waters. Salinities are 0.5 ppt or greater and fluctuate due to evaporation and mixing of fresh water and seawater.
- The riverine system includes all wetlands within channels (i.e., open conduits which at least periodically contain moving water or which form a connection between two bodies of standing water). The riverine system also includes wetlands dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens; and wetlands in areas with water containing ocean derived salts in concentrations exceeding 0.5 ppt.
- The lacustrine system includes all wetlands situated in topographic depressions or dammed river channels in areas where trees, shrubs, persistent emergents, and emergent mosses and lichens cover less than 30 percent of the total area. Lacustrine systems must be at least 8 hectares (ha) in size and are subdivided into two zones: limnetic (all deepwater habitats), and littoral (areas from the shoreward boundary to a depth of 2 meters below low water or to the maximum extent of non-persistent emergents). All wetlands fall into the littoral zone.
- The palustrine system includes all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses and lichens, and all such wetlands that occur in tidal areas where the salinity due to ocean derived salts is less than 0.5 ppt. A wetland lacking the above vegetation is also palustrine if: it is less than 8 ha in size; it does not have an active wave-formed or bedrock shoreline; water depth in the deepest part of the basin is less than 2 meters at low water; or salinity due to ocean derived salts is less than 0.5 ppt.

Note that salinity category does not affect whether or not an area qualifies as a wetland under either the HRS or the USFWS definition.

Highlight A-8 divides wetland and deepwater categories defined on NWI maps into three categories: those presumed to be eligible for HRS purposes, those that may under certain

circumstances be eligible for HRS purposes, and those that generally will not be eligible for HRS purposes.

HIGHLIGHT A-8 COMPARISON OF HRS WETLANDS DEFINITION AND WETLANDS CLASSIFICATION SYSTEM USED FOR NWI MAPS

Wetlands Category on NWI Maps	Eligible as HRS wetlands?		
	Yes ^a	Possibly ^b	Generally Not ^c
Marine System			
Subtidal			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Reef			T
Intertidal			
Aquatic Bed			T
Reef			T
Rocky Shore		T	
Unconsolidated Shore		T	
Estuarine System			
Subtidal			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Reef			T
Intertidal			
Aquatic Bed			T
Reef			T
Streambed		T	
Rocky Shore		T	
Unconsolidated Shore		T	
Emergent Wetland	T		
Scrub-Shrub Wetland	T		
Forested Wetland	T		
Palustrine System			
Rock Bottom			T
Unconsolidated Bottom		T	
Aquatic Bed			T
Unconsolidated Shore		T	
Moss-Lichen Wetland	T		
Emergent Wetland	T		
Scrub-Shrub Wetland	T		
Forested Wetland	T		

^a Can be presumed to meet the 40 CFR 230.3 definition of a wetland.

^b May meet the 40 CFR 230.3 definition of a wetland if emergent hydrophytes are present.

^c Generally will not meet the 40 CFR 230.3 definition of a wetland, except for some unique types of wetlands (e.g., some shoals or reefs).

(continued on next page)

HIGHLIGHT A-8 (continued)
COMPARISON OF HRS WETLANDS DEFINITION AND WETLANDS
CLASSIFICATION SYSTEM USED FOR NWI MAPS

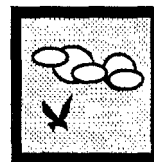
Wetlands Category on NWI Map	Eligible as HRS wetlands?		
	Yes ^a	Possibly ^b	Generally Not ^c
Riverine System			
Tidal			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Streambed		T	
Rocky Shore		T	
Unconsolidated Shore		T	
Emergent Wetland	T		
Lower Perennial			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Rocky Shore		T	
Unconsolidated Shore		T	
Emergent Wetland	T		
Upper Perennial			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Rocky Shore		T	
Unconsolidated Shore		T	
Intermittent			
Stream Bed		T	
Lacustrine System			
Limnetic			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Littoral			
Rock Bottom			T
Unconsolidated Bottom			T
Aquatic Bed			T
Rocky Shore		T	
Unconsolidated Shore		T	
Emergent Wetland	T		

^a Can be presumed to meet the 40 CFR 230.3 definition of a wetland.

^b May meet the 40 CFR 230.3 definition of a wetland if emergent hydrophytes are present.

^c Generally will not meet the 40 CFR 230.3 definition of a wetland, except for some unique types of wetlands (e.g., some shoals or reefs).

SECTION A.3 PROCESS FOR IDENTIFYING AND DELINEATING SENSITIVE ENVIRONMENTS



This section provides guidance for obtaining the information required to identify and delineate sensitive environments evaluated in the HRS. The steps in this section are based on the definitions of sensitive environments in Section A.2 and the data sources found in Section A.4. This section divides the HRS sensitive environment categories into three groups: those likely to be delineated on USGS topographic maps, those likely to be delineated on specialized maps or in special documents, and those that require professional judgement to identify and delineate. Each category requiring professional judgement is followed by a stepwise approach to assist the scorer in identifying whether or not the specific sensitive environment is at least partially within the TDL or area of observed contamination. The steps presented for each sensitive environment category should not be viewed as a list of definitive criteria, but rather are intended to guide professional judgment in identifying non-statutorily defined sensitive environments. The definitions provided in Section A.2 and the information sources provided in Section A.4 supplement the guidance provided in this section.

SENSITIVE ENVIRONMENTS LIKELY TO BE DELINEATED ON USGS TOPOGRAPHIC MAPS

The following sensitive environments are likely to be identified and delineated on U.S. Geological Survey (USGS) topographic maps:

- Designated Federal Wilderness Area
- National Lakeshore Recreational Area
- National Monument
- National or State Wildlife Refuge
- National Park
- National Preserve
- National Seashore Recreational Area
- State Lands Designated for Wildlife or Game Management (in some cases)
- Wetlands (in some cases).

If site topographic maps are outdated, the scorer may need to check Federal Register notices and other materials (e.g., state publications) to update information. A list of sources for updating information on these sensitive environments is provided in Section A.4. In many cases, the level of detail provided by USGS topographic maps in delineating the above sensitive environments will be sufficient for HRS scoring (see discussions of scoring strategies in pathway-specific sections of this document). In other cases, more specialized maps will be required.

SENSITIVE ENVIRONMENTS LIKELY TO BE DELINEATED ON SPECIALIZED MAPS OR IN SPECIAL DOCUMENTS

The sensitive environments listed below are likely to be delineated on specialized maps or described in special documents. Most of the sensitive environments delineated on USGS topographic

maps also are delineated on specialized maps; these specialized maps should be used if more precise delineations are required.

- Administratively Proposed Federal Wilderness Area
- Areas Identified Under the Coastal Zone Management Act
- Critical Areas Identified Under the Clean Lakes Program
- Critical Habitat for Federal Designated Endangered or Threatened Species
- Federal Designated Scenic or Wild River
- Federal Land Designated for Protection of Natural Ecosystems
- Marine Sanctuary
- National River Reach Designated as Recreational
- Sensitive Areas Identified Under the National Estuary Program or Near Coastal Waters Program
- State Designated Areas for Protection and Maintenance of Aquatic Life
- State Designated Natural Areas
- State Designated Scenic or Wild River
- State Land Designated for Wildlife or Game Management (in some cases)
- Unit of the Coastal Barrier Resources System
- Wetlands (in some cases).

If needed, check *Federal Register* notices and other materials (e.g., state publications) to update information about these sensitive environments. A list of specialized maps and other sources for obtaining updated information is provided in Section A.4. Specialized maps may not be sufficient to evaluate wetlands; professional judgment may also be required.

SENSITIVE ENVIRONMENTS THAT REQUIRE PROFESSIONAL JUDGMENT AND/OR SPECIFIC EXPERTISE TO IDENTIFY AND DELINEATE

The sensitive environments listed alphabetically below generally are not delineated on maps or described in specialized publications. Identifying and delineating these sensitive environments generally require assistance from appropriate Federal, state, or local agencies or recognized experts. It may be necessary to meet with these individuals and/or provide them with maps and other site information. Agencies designated as CERCLA natural resource trustees (see **Highlight A-5**, page A-12) and state or local agencies that have statutory responsibility for or involvement in management of sensitive environment generally should be consulted (e.g., state fish and game departments). If the Superfund remedial program has a biological technical assistance group (BTAG) in the Region, the BTAG chairperson may be able to identify appropriate agencies and/or individuals to contact. The Regional Site Assessment Manager can provide the name and phone number of the BTAG chairperson.

COASTAL BARRIER – PARTIALLY DEVELOPED

- (1) Determine whether any coastal barriers (as defined in Section A.2) are at least partially within the air and surface water pathway TDLs. A state coastal zone management agency, EPA's Near Coastal Waters program, or county real estate officials may be able to offer assistance in making this determination. If no such areas are found, stop; otherwise, proceed to Step (2).
- (2) Determine if any of the areas is a unit of the National Coastal Barrier Resources System. If so, the area qualifies as a separate sensitive environment for HRS purposes and should be evaluated based on that classification. If all areas in question are units of the National Coastal Barrier Resources System, stop; otherwise proceed to Step (3).

- (3) Determine which of the areas meet the definitions of a partially developed coastal barrier or an undeveloped coastal barrier (as specified in Section A.2):
- The entire coastal barrier is undeveloped if it contains (on average) fewer than one man-made structure per 5 acres of fastland area.
 - A portion of the coastal barrier is undeveloped if it has at least 1/4-mile of undeveloped shoreline on the shoreward side of the coastal barrier and the undeveloped area extends through the fastland from the beach to the associated landward aquatic habitat.
 - A coastal barrier is partially developed if it contains (on average) one or more manmade structures per 5 acres of fastland, but no more than 50 percent of the fastland area is covered by one or more man-made structures per 5 acres of fastland area. A coastal barrier that is more than 50 percent developed is not eligible for evaluation as a partially developed coastal barrier.
- (4) Evaluate each of the qualifying areas as an undeveloped or partially developed coastal barrier. If the same coastal barrier has portions that qualify as both undeveloped and partially developed, evaluate either the undeveloped or partially developed portions, but not both (i.e., do not score the same coastal barrier as both undeveloped and partially developed).

COASTAL BARRIER – UNDEVELOPED

See subsection above, Coastal Barrier — Partially Developed.

HABITAT KNOWN TO BE USED BY A FEDERAL DESIGNATED OR PROPOSED ENDANGERED OR THREATENED SPECIES

- (1) Determine whether any of the species (as defined in Section A.1) are known to be present in and using suitable habitat within the TDLs (or areas of observed contamination) for the site. Contact a representative of an appropriate Federal, state, county, or local agency (e.g., USFWS, NMFS, state fish and game department, state Natural Heritage program) or a recognized expert to help determine if suitable habitat for any of the species exists within the TDLs or areas of contamination and if the habitat is currently occupied and used by the species. It may be difficult to obtain information beyond the known presence of a species within a given area, distance ring, or surface water body. If it is not possible to document the presence of one or more of the species within the TDLs (or areas of contamination), stop; otherwise, proceed to Step (2).
- (2) Document all habitat known to be used by each eligible species within the TDL. Appropriate documentation includes (but is not limited to):
- A written or documented oral statement from a representative of the appropriate Federal, state, or local agency (or from a recognized expert) that establishes the presence of the species within the TDLs or area of observed contamination; or
 - Any other evidence that documents the recent presence of the species in suitable habitat within the TDLs or areas of observed contamination (e.g., within a 5-year period prior to HRS package preparation).

Ensure that a habitat identified as used by a Federal designated or proposed endangered or threatened species (or a portion thereof) is not listed as a critical habitat for that species as defined in Section A.2. If an area is a critical habitat for a Federal designated species, the area qualifies as a separate sensitive environment for HRS scoring and should be evaluated for that species based solely on that classification.

HABITAT KNOWN TO BE USED BY A SPECIES UNDER REVIEW AS TO ITS FEDERAL ENDANGERED OR THREATENED STATUS

See subsection above, Habitat Known to be Used by a Federal Designated or Proposed Endangered or Threatened Species.

HABITAT KNOWN TO BE USED BY A STATE DESIGNATED ENDANGERED OR THREATENED SPECIES

See subsection above, Habitat Known to be Used by a Federal Designated or Proposed Endangered or Threatened Species.

MIGRATORY PATHWAYS AND FEEDING AREAS CRITICAL FOR MAINTENANCE OF ANADROMOUS FISH SPECIES WITHIN RIVER REACHES OR AREAS IN LAKES OR COASTAL TIDAL WATERS IN WHICH THE FISH SPEND EXTENDED PERIODS OF TIME

- (1) Contact one or more of the following, provide them with the definitional criteria for these sensitive environment categories (i.e., as stated in HRS Table 4-23), and ask them to determine whether any surface water bodies within the TDLS-s meet one or all of the definitional criteria:
 - Representatives of agencies designated as CERCLA natural resource trustees (see **Highlight A-5**);
 - Representatives of state or local agencies that have statutory responsibility for or involvement in management of the area or types of species of concern (e.g., state fish and game departments), even if these agencies are not designated CERCLA natural resource trustees; and/or
 - Recognized experts familiar with the area or types of species of concern.
- (2) Request written documentation (on appropriate letterhead) that the area of concern is a critical spawning area and some information about the species and habitat(s) of concern (e.g., some explanation as to why the habitat is critical). The documentation should be legally defensible for CERCLA damage assessment purposes. Examples of suitable evidence are provided in **Highlights A-6** and **A-7**. If these individuals do not identify any qualifying areas, stop; otherwise, proceed to Step (3).
- (3) Evaluate each qualifying area identified as a critical spawning area, migratory pathway, or feeding area.

PARTICULAR AREAS, RELATIVELY SMALL IN SIZE, IMPORTANT TO MAINTENANCE OF UNIQUE BIOTIC COMMUNITIES

- (1) Contact representatives from State Natural Heritage Programs, state natural resources agencies, and recognized experts to determine if any unique, rare, or otherwise ecologically valuable biotic areas (e.g., old growth areas, pine barrens, bogs) are located within the TDLS-s (or areas of observed contamination) for the site. If there are no such areas within the TDLS-s of the site, stop; otherwise, proceed to Step (2).
- (2) Determine if each area in question meets the definitional criteria as specified in Section A.2. Four types of areas generally will meet the following definitional criteria for this sensitive environment (note that other areas that do not meet these criteria may be eligible):
 - Areas with a high proportion of species with highly restrictive habitat requirements due to unusual natural biotic and/or abiotic conditions;

- Isolated areas that may or may not have an unusual community structure per se, but are particularly important to the continued existence of their biotic communities because of their geographic isolation;
- Areas with a high proportion of locally endemic species because of a relatively long period of geographic isolation and/or are exceptional examples of “climax” communities because of minimal human disturbance; or
- Areas that are vital to a species for maintenance of a community.

SPAWNING AREAS CRITICAL FOR THE MAINTENANCE OF FISH/SHELLFISH SPECIES WITHIN RIVER, LAKE, OR COASTAL TIDAL WATERS

See subsection above, Migratory Pathways and Feeding Areas Critical for Maintenance of Anadromous Fish Species Within River Reaches or Areas in Lakes or Coastal Tidal Waters in which the Fish spend Extended Periods of Time.

TERRESTRIAL AREAS USED FOR BREEDING BY LARGE OR DENSE AGGREGATIONS OF ANIMALS

- (1) Contact state fish and game officials, USFWS officials, or recognized experts to determine whether any terrestrial species that normally breed in large or dense aggregations have been observed or are expected to be present within the air and surface water pathway TDLs or areas of observed contamination of the site. If no such species have been observed or are expected to be present within the TDL or area of observed contamination, stop; otherwise, proceed to Step (2).
- (2) Determine if each area in question meets the definitional criteria specified in Section A.2 and if such breeding occurs within that area. Support documentation may include defining the breeding habitat requirements of the species of concern and demonstrating that the species typically nests or breeds in large colonies or dense aggregations. Additional pathway-specific criteria include:
 - In the surface water pathway, eligible areas are limited to terrestrial areas that are used for breeding by terrestrial vertebrate species with aquatic or semi-aquatic foraging habits (i.e., birds, mammals, or reptiles that consume fish or other aquatic organisms that inhabit or might inhabit the surface water bodies within the TDL). Such species generally correspond to those defined in Section A.2 as “terrestrial vertebrates with semi-aquatic habits”.
 - In the soil exposure pathway, eligible areas are limited to terrestrial areas that are at least partially on the area of observed contamination and are used for breeding by terrestrial vertebrate species.
 - In the air pathway, eligible areas are limited to terrestrial areas that are at least partially within the TDL and are used for breeding by terrestrial vertebrate species.

WETLANDS

- (1) Determine if there are any wetlands within the air or surface water pathway TDLs. As a starting point, use existing maps to delineate wetlands within the TDL. The preferred maps are the NWI Maps or state maps of equivalent quality. If these maps are not available, use USGS topographic maps or Soil Conservation Service (SCS) maps to initially screen wetlands locations.

- Some wetlands delineated on NWI maps do not meet the 40 CFR 230.3 wetlands definition required for HRS eligibility. **Highlight A-9** provides a guide to which wetlands delineated on NWI maps definitely can, possibly can, and generally cannot be presumed to meet the 40 CFR 230.3 definition of a wetland.
- Most wetlands delineated on USGS topographic maps meet the 40 CFR 230.3 definition. Because these areas are mapped based largely on aerial photographs, wetlands less than 40 feet wide may not appear on the maps, and wetlands boundaries are relatively crude.
- Areas delineated as wetlands on SCS maps are based largely on the presence of hydric soils and may not meet the 40 CFR 230.3 definition.

- (2) If the NWI, USGS, SCS, and/or state maps are out of date, verify the areas delineated as wetlands on maps (e.g., during site reconnaissance). For many wetland areas, a photograph will be sufficient documentation. Some eligible wetlands may not appear on any map. For areas not delineated as a wetland on maps to be eligible for HRS evaluation as wetland, there should be adequate documentation (e.g., photographs, identification by a recognized wetlands expert) that the area meets the 40 CFR 230.3 definition. If there are no wetland areas within the TDLs; stop; otherwise proceed to Step (3).

HIGHLIGHT A-9 ELIGIBILITY OF WETLAND CATEGORIES ON NWI MAPS FOR HRS SCORING

Wetlands Category on NWI Maps	Eligible as HRS wetlands?		
	Yes ^a	Possibly ^b	Generally Not ^c
Emergent wetland	T		
Scrub-shrub wetland	T		
Forested wetland	T		
Moss-lichen wetland	T		
Streambed		T	
Rocky Shore		T	
Unconsolidated shore		T	
Streambed (vegetated)		T	
Unconsolidated Shore (vegetated)		T	
Unconsolidated bottom			T
Aquatic bed			T
Reef			T
Rock bottom			T

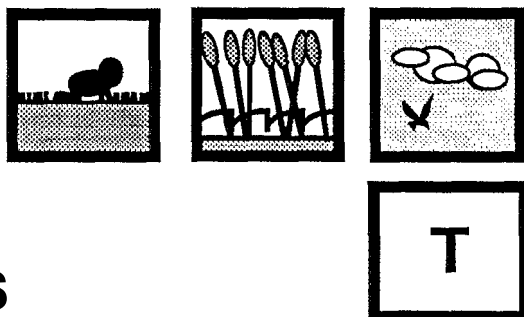
^a Can be presumed to meet the 40 CFR 230.3 definition of a wetland.

^b May meet the 40 CFR 230.3 definition of a wetland if emergent hydrophytes are present.

^c Generally will not meet the 40 CFR 230.3 definition of a wetland, except for some unique types of wetlands (e.g., some shoals or reefs).

- (3) If historical data (e.g., an old aerial photograph) document the presence of a wetland, and the SI shows that the wetland no longer exists, the area still may be eligible if the wetland was eliminated because of site-related activity. Conversely, the area generally will not be eligible if the wetland was eliminated for non-site-related reasons.
- (4) Under certain circumstances, surface impoundments that meet the 40 CFR 230.3 definition of a wetland may be considered wetlands for HRS purposes.
- Surface impoundments constructed in an area that was previously occupied by a wetland generally are eligible (e.g., if a natural wetland was used as a surface impoundment).
 - Surface impoundments that have inadvertently become wetlands may be eligible on a case-by-case basis (e.g., a surface impoundment that has become a wetland due to poor waste management practices may be eligible on a case-by-case basis).
 - Surface impoundments created solely as waste management units generally are not eligible. However, surface impoundments created both as waste management units and as wetland mitigation areas may be eligible on a case-by-case basis.
 - Surface impoundments created in an area that originally was non-wetland but has become a wetland area due to site- or non-site related activities (e.g., altered streamflow patterns) may be eligible on a case-by-case basis.
- (5) Evaluate each qualifying wetland based on linear frontage or perimeter as specified in Section 8.16 and/or Section 9.6.
- (6) If the targets score for wetlands is critical for Nation Priorities List (NPL) listing (i.e., the site would not score above 28.50 unless the wetland areas are scored), there should be adequate documentation that the presumed wetlands meet the 40 CFR 230.3 definition of a wetland. Delineation by a recognized wetlands expert may be necessary.

SECTION A.4 SOURCES OF INFORMATION FOR IDENTIFYING SENSITIVE ENVIRONMENTS



This section provides sources of information for identifying and delineating wetlands and all sensitive environments listed in HRS Tables 4-23 and 5-5. Many HRS sensitive environments are identified and delineated with readily available materials (e.g., maps or U.S. Environmental Protection Agency (EPA) regional site files); however, more in-depth investigation may be necessary to determine whether they are present within the TDLs or areas of observed contamination for the site. If an area within the TDL could be a sensitive environment, identify whether it is an HRS sensitive environment and document the point value rating into which the area could be classified.

This section provides names of maps and other documents where sensitive environments are likely to be delineated, and appropriate contacts for additional information. The EPA regional office is encouraged to develop and maintain a library of all relevant documents listed in this section. The National Wildlife Federation's Conservation Directory, which is revised annually, is a valuable reference that lists governmental and nongovernmental organizations and personnel engaged in conservation work at state, national, and international levels. The HRS sensitive environments categories can be divided into three groups:

- Those likely to be delineated on USGS topographic maps. Many categories of sensitive environments are delineated on USGS topographic maps. However, if site topographic maps are out of date, it may be necessary to check *Federal Register* notices and other materials to obtain updated information. In many cases, the level of detail provided by USGS topographic maps will be sufficient for HRS purposes. In some cases, more specialized maps (available from the appropriate administering agency) or professional judgment (e.g., for wetlands) will be required. USGS topographic maps are available from USGS Earth Science Information Centers (see **Highlight A-10**), most outdoor sport stores, and local outfitters. Categories of sensitive environments in this group include:
 - Designated Federal Wilderness Area
 - National Lakeshore Recreational Area
 - National Monument
 - National or State Wildlife Refuge
 - National Park
 - National Preserve
 - National Seashore Recreational Area
 - State Lands Designated for Wildlife or Game Management (in some cases)
 - Wetlands (in some cases).
- Those requiring special maps or charts from specific agencies and other sources. Several categories of sensitive environments are delineated on specialized maps, charts or other documents available from various Federal and state agencies. Note that most of the sensitive environments delineated on USGS topographic maps also

are delineated on specialized maps; these specialized maps should be used if more precise delineations are required. Beneath each of the following sensitive environments, the name and source of the specific map, chart, or document is provided along with a contact in case additional information is needed. Categories of sensitive environments in this group include:

- Administratively Proposed Federal Wilderness Area
 - Areas Identified Under the Coastal Zone Management Act
 - Critical Areas Identified Under the Clean Lakes Program
 - Critical Habitat for Federal Designated Endangered or Threatened Species
 - Federal Designated Scenic or Wild River
 - Federal Land Designated for Protection of Natural Ecosystems
 - Marine Sanctuary National River Reach Designated as Recreational
 - Sensitive Areas Identified Under the National Estuary Program or Near Coastal Waters Program
 - State Designated Areas for Protection and Maintenance of Aquatic Life
 - State Designated Natural Areas
 - State Designated Scenic or Wild River
 - State Land Designated for Wildlife or Game Management (in some cases)
 - Unit of the Coastal Barrier Resources System
 - Wetlands (in some cases).
- Those that may require professional judgment to identify and delineate. Several categories of sensitive environments generally are not delineated on maps or otherwise described in specialized publications. Identifying and delineating these sensitive environments generally will require professional judgment. The assistance of appropriate Federal, state, or local agencies or experts in identifying these sensitive environments is encouraged. The scorer should try to obtain copies of any published information that helps to establish the area as a sensitive environment and/or delineate its boundaries. If possible, obtain a written statement from a responsible agency official or individual verifying the existence and boundaries of the sensitive environments. Sources of information provided below are not exhaustive and focus primarily on the national level. EPA regional offices are encouraged to develop lists of sources at a regional, state, and/or local level. Categories of sensitive environments in this group include:
 - Coastal Barrier — Partially Developed
 - Coastal Barrier — Undeveloped
 - Habitat Known to be Used by a Federal Designated or Proposed Endangered or Threatened Species
 - Habitat Known to be Used by a Species under Review as to its Federal Endangered or Threatened Status
 - Habitat Known to be Used by a State Designated Endangered or Threatened Species
 - Migratory Pathways and Feeding Areas Critical for Maintenance of Anadromous Fish Species within River Reaches or Areas in Lakes or Coastal Tidal Waters in which the Fish Spend Extended Periods of Time
 - Particular Areas, Relatively Small in Size, Important to Maintenance of Unique Biotic Communities

- Spawning Areas Critical for the Maintenance of Fish/Shellfish Species Within River, Lake, or Coastal Tidal Waters
- Terrestrial Areas Used for Breeding by Large or Dense Aggregations of Animals
- Wetlands.

ADMINISTRATIVELY PROPOSED FEDERAL WILDERNESS AREA

Federal Wilderness Areas may be proposed by BLM, USFS, NPS, or USFWS.

- (1) The boundaries of the proposed wilderness area should be available in a public docket or *Federal Register* notice. Contact the appropriate BLM, USFS, NPS, or USFWS regional office listed in **Highlights A-11** through **A-14** to obtain information on proposed Federal Wilderness Areas.

AREAS IDENTIFIED UNDER THE COASTAL ZONE MANAGEMENT ACT

Areas designated under the Coastal Zone Management Act include: those nominated, proposed, and designated as National Estuarine Research Reserves by NOAA, and those designated as being of particular concern in State Coastal Zone Management Plans that have been approved by NOAA.

- (2) **Highlight A-15** lists all proposed and designated National Estuarine Research Reserves as of September, 1991. Latitudes and longitudes of these areas are available from NOAA's Marine and Estuarine Management Division, Office of Ocean and Coastal Resource Management, NOS/NOAA, 1825 Connecticut Ave., Washington, DC 20235; (202) 606-4126.
- (3) A list of locations for areas nominated for the National Estuarine Research Reserve System and copies of State Coastal Zone Management Plans that delineate other areas designated as being of particular concern are available from the appropriate state coastal zone management agency or NOAA's Office of Ocean and Coastal Resource Management at (202) 606-4126.
- (4) Many eligible coastal areas are delineated on USGS topographic maps or NOAA nautical charts. USGS topographic maps can be obtained from one of the Earth Science Information Centers listed in **Highlight A-10**, most outdoor sport stores, and local outfitters. NOAA nautical charts can be obtained from NOAA's Document Distribution Office at (301) 436-6990 and from various commercial stores specializing in marine recreation (e.g., boating, fishing).
- (5) Other potential sources of information on estuaries and near coastal waters include EPA's Office of Marine and Estuarine Protection at (202) 260-7166 and Sea Grant program offices (located at major universities in coastal areas).
- (6) If further assistance is needed to delineate an area identified under the Coastal Zone Management Act, contact the appropriate state coastal zone management agency or the appropriate regional office of the National Estuarine Research Reserve System listed in **Highlight A-15**.

COASTAL BARRIER — PARTIALLY DEVELOPED

Undeveloped and partially developed coastal barriers are generally administered by a state coastal zone management agency or by EPA's Near Coastal Waters Program.

- (1) If the coastal barrier is publicly owned and administered by a state coastal zone management agency or a Federal agency, contact the appropriate agency for assistance in determining and uses on the coastal barrier.
- (2) Other sources of information for undeveloped and partially developed coastal barrier areas include aerial photographs, flood hurricane insurance maps, developers, real estate agents, and planning commissions. Alternatively, the regional contacts for the Near Coastal Waters Program (**Highlight A- 16**) may be able to provide assistance in determining land uses on the particular coastal barrier.

COASTAL BARRIER — UNDEVELOPED

See subsection above, Coastal Barrier — Partially Developed.

CRITICAL AREAS IDENTIFIED UNDER THE CLEAN LAKES PROGRAM

The Clean Lakes Program is administered by state water quality and natural resource agencies and receives funding from EPA.

- (1) The Clean Lakes Program Data Table lists latitudes and longitudes for all elements of the Clean Lakes Program. Contact EPA's Office of Water Regulations and Standards (OWRS) at (202) 260-5404 for a copy of this table.
- (2) Many eligible areas are delineated on USGS topographic maps. They can be obtained from one of the Earth Science Information Centers listed in **Highlight A- 10**, most outdoor sport stores, and local outfitters.
- (3) Further assistance in delineating a given area can be obtained from the Clean Lakes Program Regional contacts (**Highlight A- 17**), EPA's OWRS at (202) 260-5404, or the appropriate state water quality/natural resources agency.

CRITICAL HABITAT FOR FEDERAL DESIGNATED ENDANGERED OR THREATENED SPECIES

Critical habitat has not been designated for all endangered or threatened species. Although USFWS and NMFS can still designate critical habitat, in recent years they have been reluctant to do so because pinpointing specific habitats in public documents can pose a danger for the species of concern (e.g., from poachers). Only those areas listed in 50 CFR 17.95 (critical habitats for fish and wildlife species), 50 CFR 17.96 (critical habitat for plant species), or a *Federal Register* notice, are designated critical habitat. Areas proposed as critical habitats are not evaluated in the HRS.

- (1) All critical habitat for Federal endangered or threatened species are identified in 50 CFR 17.95 and 50 CFR 17.96 in the form of maps and/or detailed descriptions.
- (2) If further assistance is needed to delineate a critical habitat, contact the appropriate USFWS regional office listed in **Highlight A-12**.

DESIGNATED FEDERAL WILDERNESS AREA

A designated Federal Wilderness Area may be administered by USFWS, BLM, USFS, or NPS.

- (1) The Wilderness Society publishes a map entitled *The National Wilderness Preservation System, 1964-1989* which locates all Federal Wilderness Areas designated before 1989. Contact the Wilderness Society at (202) 842-3400 to obtain a current listing of all designated Federal Wilderness Areas.

- (2) Federal Wilderness Areas should be delineated on USGS topographic maps of the area. In most cases, this delineation will be adequate for HRS purposes.
- (3) If a Federal Wilderness Area is not identified or adequately delineated on USGS topographic maps, contact the appropriate regional office of the appropriate administering agency listed in **Highlights A-11** through **A-14**.

FEDERAL DESIGNATED SCENIC OR WILD RIVER

Rivers or segments of rivers that are designated as National Wild and Scenic Rivers are administered by either a Federal agency (i.e., NPS, USFWS, USFS, or BLM), a state agency, or a Native American nation.

- (1) All Federal designated scenic or wild rivers are delineated on a map entitled, *National Wild and Scenic Rivers System*, Map Number 38077-BQ-NA-05M-00, December 1990. A listing of each unit, along with the name and address of the administering agency, is included with the map. This map can be obtained from the USGS Earth Science Information Centers listed in **Highlight A-10**.
- (2) NPS maintains a computerized database of information for each unit of the National Wild and Scenic River System. Information includes: the name of the unit, statutory or other authority for inclusion in the system, administering agency, total number of miles, and number of miles designated as wild, scenic, or recreational. Contact NPS's Division of Park Planning and Protection at (202) 208-4290 for this listing.
- (3) The Wild and Scenic Rivers Act identifies each river or river segment as wild, scenic, or recreational. Contact NPS's Division of Park Planning and Protection at (202) 208-4290 to obtain a copy of the act.
- (4) If additional information is needed for a particular river segment, contact the appropriate BLM, USFS, NPS, or USFWS regional office listed in **Highlights A-11 through A-14**.
- (5) River reaches designated under the Clean Water Act and identified in STORET are not eligible for HRS evaluation.

FEDERAL LAND DESIGNATED FOR THE PROTECTION OF NATURAL ECOSYSTEMS

These areas are usually administered by BLM or USFS.

- (1) Resource Management Plan (or other similar document) published by BLM or USFS will identify areas designated for the protection of natural ecosystems in Resource Areas administered by those agencies. Resource Management Plans provide maps and latitude and longitude for delineating these areas (note that prior to 1980 these documents were known as Management Framework Plans and provided less complete environmental data). **Highlight A-13** or **A-14** lists BI-M and USFS regional offices that can supply most Resource Management Plans.
- (2) EIS documents delineating public lands designated as Wildlife Mitigation Areas can be obtained by contacting the appropriate BLM or USFS regional office.
- (3) If an area designated for the protection of natural ecosystems is not identified or adequately delineated in the Resource Management Plan, contact the appropriate BLM or USFS regional office. If the area is managed by another Federal agency (e.g., BIA, MMS, OSM), contact the appropriate agency for copies of the appropriate Resource Management Plan(s) or EIS(s).

HABITAT KNOWN TO BE USED BY FEDERAL DESIGNATED OR PROPOSED ENDANGERED OR THREATENED SPECIES

Endangered or threatened fish, wildlife, and plant species fall under the jurisdiction of USFWS. Endangered or threatened marine animals (e.g., marine mammals, sea turtles) fall under the jurisdiction of NMFS.

- (1) All Federal designated endangered or threatened species are listed in 50 CFR 17.11 (fauna) and 17.12 (flora) or in a *Federal Register* notice. Species proposed by the Secretary of the Interior for designation as Federal endangered or threatened species are published in the *Federal Register*. To obtain current lists of designated and proposed Federal endangered or threatened species, contact the appropriate USFWS regional office listed in **Highlight A-12** or NMFS's Office of Protected Resources at (301) 427-2322.
- (2) A number of sources can provide assistance in determining whether habitat known to be used by any of the species identified in Step (1) is within the TDLs. They include: state fish and game or wildlife, natural resource, or environmental conservation agency, the state Natural Heritage program, other local or regional experts (e.g., faculty members at a nearby university, members of the local Audubon society), the appropriate USFWS regional office and/or NMFS at (301) 427-2322. If the Superfund remedial program has a BTAG in the region, the BTAG chairperson may be able to direct you to the appropriate agencies and individuals. Contact the regional Site Assessment Manager to obtain the name and phone number of the BTAG chairperson.

HABITAT KNOWN TO BE USED BY SPECIES UNDER REVIEW AS TO ITS FEDERAL ENDANGERED OR THREATENED STATUS

- (1) Plant and animal species under review as to their Federal endangered or threatened status are listed in a Comprehensive Notice of Review, published biennially in the *Federal Register* by USFWS. Marine animals under review as to their Federal endangered or threatened status are listed periodically in a Candidate Species List, published in the *Federal Register* by NOAA. To obtain current lists of species under review as to their endangered or threatened status, contact the appropriate USFWS regional office or NMFS's Office of Protected Resources at (301) 427-2322.
- (2) A number of sources can provide assistance in determining whether habitat known to be used by any of the species identified in Step (1) is within the TDLs. They include: state fish and game or wildlife, natural resource, or environmental conservation agency, the state Natural Heritage program, other local or regional experts (e.g., faculty members at a nearby university, members of the local Audubon society), the appropriate USFWS regional office and/or NMFS at (301) 427-2322. If the Superfund remedial program has a BTAG in the region, the BTAG chairperson may be able to direct you to the appropriate agencies and individuals. Contact the regional Site Assessment Manager to obtain the name and phone number of the BTAG chairperson.

HABITAT KNOWN TO BE USED BY STATE DESIGNATED ENDANGERED OR THREATENED SPECIES

A number of agencies can provide assistance to identify and delineate this sensitive environment category. They include: the state fish and game or wildlife, natural resource, or environmental conservation agency, other local or regional experts (e.g., faculty members at a nearby university, members of the local Audubon society), and/or the appropriate USFWS regional office. Note that the USFWS Small Wetlands Acquisition Program protects prairie potholes and other small wetlands important for waterfowl production. If the Superfund remedial program has a BTAG in the region, the BTAG chairperson may be able to direct you to the appropriate agencies and individuals.

Contact the regional Site Assessment Manager to obtain the name and phone number of the BTAG chairperson.

MARINE SANCTUARY

These areas are administered by NOAA.

- (1) NOAA has mapped the general locations of National Marine Sanctuaries. Contact NOAA's Office of Ocean and Coastal Resource Management at (202) 606-4126 for a copy of this map. **Highlight A-18** provides a listing of the nautical chart numbers of all of the National Marine Sanctuaries.
- (2) National Marine Sanctuaries will be delineated on the appropriate nautical chart(s) available from the NOAA's Document Distribution Office at (301) 436-6990 and from various commercial stores specializing in marine recreation (e.g., boating, fishing).
- (3) If further information is needed to delineate a National Marine Sanctuary, contact NOAA's Office of Ocean and Coastal Resource Management at (202) 606-4126.

MIGRATORY PATHWAYS AND FEEDING AREAS CRITICAL FOR MAINTENANCE OF ANADROMOUS FISH SPECIES WITHIN RIVER REACHES OR AREAS IN LAKES OR COASTAL TIDAL WATERS IN WHICH THE FISH SPEND EXTENDED PERIODS OF TIME

See subsection above, Habitat Known to be used by State Designated Endangered or Threatened Species.

NATIONAL LAKESHORE RECREATIONAL AREA

These areas are administered by the NPS.

- (1) The boundaries of these sensitive environments generally are delineated on USGS topographic maps. In most cases, this delineation will be adequate for HRS purposes.
- (2) If the sensitive environment is not identified or adequately delineated on USGS topographic maps, contact the appropriate NPS regional office listed in **Highlight A-11**.
- (3) NPS maintains a computerized database that lists all lands under its jurisdiction. Contact NPS at (202) 343-7014 to obtain a copy.

NATIONAL MONUMENT

See subsection above, National Lakeshore Recreational Area.

NATIONAL OR STATE WILDLIFE REFUGE

National Wildlife Refuges are administered by the USFWS. State wildlife refuges generally are administered by a state fish and game or wildlife management agency.

- (1) All lands under USFWS jurisdiction, including national wildlife refuges, are identified in the *Annual Report of Lands Under Control of the USFWS*. Contact the USFWS Division of Realty at (703) 358-1816 to obtain a copy of the report. Lists of state wildlife refuges should be available from the appropriate fish and game or wildlife management agency.
- (2) National and state wildlife refuges generally are delineated on USGS topographic maps. State wildlife refuges also may be delineated on some official state highway maps. In most cases, this delineation will be adequate for HRS purposes.

- (3) If a wildlife refuge is not identified or adequately delineated on USGS topographic maps or other maps, contact the appropriate USFWS regional office listed in **Highlight A-12** or the appropriate state fish and game or wildlife management agency.

NATIONAL PARK

See subsection above, National Lakeshore Recreational Area.

NATIONAL PRESERVE

See subsection above, National Lakeshore Recreational Area.

NATIONAL RIVER REACH DESIGNATED AS RECREATIONAL

See subsection above, Federal Designated Scenic or Wild River.

NATIONAL SEASHORE RECREATIONAL AREA

See subsection above, National Lakeshore Recreational Area.

PARTICULAR AREAS, RELATIVELY SMALL IN SIZE, IMPORTANT TO MAINTENANCE OF UNIQUE BIOTIC COMMUNITIES

See subsection above, Habitat Known to be used by State Designated Endangered or Threatened Species.

SENSITIVE AREAS IDENTIFIED UNDER THE NATIONAL ESTUARY PROGRAM OR NEAR COASTAL WATERS PROGRAM

This sensitive environment category includes areas identified in both the National Estuary Program and the Near Coastal Waters Program. Both programs are administered by EPA.

- (1) **Highlight A-19** identifies the components of the National Estuary Program for each EPA region. Contact the appropriate office to delineate the estuary program component in question.
- (2) **Highlight A-16** lists the EPA Regional contacts for the Near Coastal Waters Program. Contact the appropriate office to delineate sensitive areas identified under the Near Coastal Waters Program. (Note that as of December 1991, no areas within the Near Coastal Waters Program had been designated as sensitive areas.)
- (3) Other potential sources of information on estuaries and near coastal waters include EPA's Office of Marine and Estuarine Protection at (202) 260-7166 and Sea Grant program offices (located at major universities in coastal areas).

SPAWNING AREAS CRITICAL FOR THE MAINTENANCE OF FISH/SHELLFISH SPECIES WITHIN RIVER, LAKE, OR COASTAL TIDAL WATERS

See subsection above, Habitat Known to be used by State Designated Endangered or Threatened Species.

STATE DESIGNATED AREAS FOR PROTECTION OF AQUATIC LIFE

These areas generally are administered by a state environmental protection or water quality agency.

- (1) Locations and boundaries of these areas can be found in the Clean Water Act Section 305(a) Report filed by the state, and is updated biennially with Section 305(b) Reports filed with EPA.
- (2) Copies of these reports can be obtained from the state environmental protection or water quality agency, the appropriate EPA regional office listed in **Highlight A-20**, or in the *Environmental Reporter* (under state regulations).

STATE DESIGNATED NATURAL AREAS

These areas generally are administered by a state natural resources or land management agency.

- (1) If available, obtain copies of any relevant documents (e.g., maps or state regulatory codes) delineating the designated natural area.
- (2) If no official maps or documents are available, request a signed statement from a responsible official of the appropriate state natural resources or land management agency to document the boundaries of state designated natural areas within the TDLs of the site.

STATE DESIGNATED SCENIC OR WILD RIVER

These areas generally are administered by a state park service or natural resources agency.

- (1) Maps or other documents that specify river reaches designated as state scenic or wild rivers may be available from a state park service, state natural resources agency or local outfitters.
- (2) Contact NPS's Division of Recreation Resources Assistance, Washington, D.C. at (202) 343-3780 to obtain information on state systems.
- (3) If no official maps or documents are available, request a signed statement from a responsible official of the appropriate state park service or natural resources agency to document the boundaries of state designated scenic or wild rivers within the TDLs of the site.

STATE LAND DESIGNATED FOR WILDLIFE OR GAME MANAGEMENT

Some state lands designated for wildlife or game management are delineated on USGS maps. These lands generally are administered by a state fish and game or wildlife management agency.

- (1) Lists of state wildlife or game management areas should be available from the appropriate fish and game or wildlife management agency.
- (2) In some cases, state lands designated for wildlife and game management will be delineated on USGS topographic maps.
- (3) If an area is not identified or adequately delineated on USGS maps, contact the appropriate state fish and game or wildlife management agency.

TERRESTRIAL AREAS UTILIZED FOR BREEDING BY LARGE OR DENSE AGGREGATIONS OF ANIMALS

See subsection above, Habitat Known to be used by State Designated Endangered or Threatened Species.

UNIT OF COASTAL BARRIER RESOURCES SYSTEM

The Coastal Barrier Resources System is administered by state coastal zone management agencies; maps that depict the system are maintained by USFWS.

- (1) All units of the Coastal Barrier Resources System are listed in Part VI of the June 6, 1991 *Federal Register*, which contains an index to the map series entitled *Coastal Barrier Resources System*, numbered A01 through T12 (excluding maps T02 and T03), and the maps designated T02A and T03A.
- (2) Using the index referenced in Step (1), obtain the appropriate map from the USGS Book Sales Office at (303) 236-7476, or order them using the order form provided in the *Federal Register* notice. Alternatively, maps covering a particular state are available for inspection at selected regional and field USFWS offices listed in the *Federal Register* notice and at the state coastal zone management agency.
- (3) After May 15, 1992, no units will be added to the Coastal Barrier Resource System; however, individual units may change in size or location due to natural forces (e.g. wave action). If any major natural changes have occurred in the coastal barrier since the map was published, contact the state coastal zone management agency or USFWS.

WETLANDS

The level of documentation required for identifying and delineating wetlands will vary among sites (see Sections 8.17, 9.6, and A.3 for guidance in determining required level of documentation). In many cases, wetlands delineation provided by maps may be sufficient for HRS purposes.

- (1) The preferred maps are the NWI Maps or state maps of equivalent quality (e.g., Wisconsin). NWI maps are available from USGS Earth Science Information Centers listed in **Highlight A-10**. The availability of state maps must be determined on a state-by-state basis. Note that wetlands identified on these maps may not meet the HRS definitional criteria for a wetland.
- (2) USGS topographic maps or wetlands maps provided by the SCS can be used to approximate wetland boundaries. USGS topographic maps are available from USGS Earth Science Information Centers (see **Highlight A-10**), most outdoor sport stores, and local outfitters. SCS maps are available from each state office of the SCS. Note that not all areas listed as wetlands on these maps meet the HRS definitional criteria for a wetland. Note also that SCS maps often err on the side of listing areas as wetlands that are not actually wetlands.
- (3) Other wetlands maps can be used to verify wetlands boundaries. Again, note that wetlands identified on these maps may not meet the HRS definitional criteria for a wetland.
 - The USFWS Small Wetlands Acquisition Program protects prairie potholes and other small wetlands important for waterfowl production and may have maps.
 - USGS has computerized maps delineating wetlands in Alabama, Florida, North Carolina, and Texas.
 - BIA has delineated 400,000 acres of wetlands on Native American reservations in Minnesota and Wisconsin.
 - Wetlands maps are included in North American Waterfowl Management Plans.
 - Other contacts include: the Isaak Walton League, Ducks Unlimited, Trout Unlimited, and The Wilderness Society.

- (4) If an even greater level of detail is required to verify the presence of a wetland and determine its length (or perimeter), a wetlands expert should be contacted. These other contacts include:
- The U.S. Army Corps of Engineers Civil Works district offices and EPA regional offices (see **Highlight A-20**) have wetlands experts who deal with permitting issues under Section 404 of the Clean Water Act.
 - State soil and water conservation offices often have wetlands experts who deal with various permitting and regulatory issues.

HIGHLIGHT A-10
U.S. GEOLOGICAL SURVEY EARTH SCIENCE
INFORMATION CENTER OFFICES

ESIC Office	Address	Telephone
Virginia (National Headquarters)	Earth Science Information Center USGS 507 National Center Reston, VA 22092	1-800-USA-MAPS or (703) 648-6045
Alaska	Earth Science Information Center USGS 4230 University Dr., Room 101 Anchorage, AK 99508-4664	(907) 786-7011
California	Western Mapping Center-ESIC USGS 345 Middlefield Rd. MS 532 Menlo Park, CA 94025	(415) 329-4309
Colorado	Rocky Mountain Mapping Center-ESIC USGS Box 25046, Stop 504 Federal Center Denver, CO 80225	(303) 236-5829
Mississippi	Earth Science Information Center USGS Building 3101 Stennis Space Center, MS 39529	(601) 688-3544
Missouri	Mid-Continent Mapping Center-ESIC USGS 1400 Independence Rd. MS 231 Rolla, MO 65401	(314) 341-0851
South Dakota	USGS EROS Data Center Mundt Federal Building Sioux Falls, SD 57198	(605) 594-6161

**HIGHLIGHT A-11
U.S. NATIONAL PARK SERVICE
REGIONAL OFFICES**

Region	Regional Office Address	Telephone
North Atlantic	15 State St. Boston, MA 02109	(617) 223-5200
Mid-Atlantic	143 S. 3rd Street Philadelphia, PA 19106	(215) 597-7013
Southeast	75 Spring St. Atlanta, GA 30303	(404) 331-4998
Midwest	1709 Jackson St. Omaha, NE 68102	(402) 221-3471
Rocky Mountain	P.O. Box 25287 Denver, CO 80225	(303) 969-2100
Southwest	P.O. Box 728 Santa Fe, NM 87504-0728	(505) 988-6012
Western	600 Harrison St. Suite 600 San Francisco, CA 94107	(415) 745-3955
Pacific Northwest	83 S. King St. Suite 212 Seattle, WA 98104	(206) 553-5565
Alaska	2525 Gamble St. Anchorage, AK 99503	(907) 257-2687

See **Highlight A-21** for NPS regional boundaries.

HIGHLIGHT A-12
U.S. FISH AND WILDLIFE SERVICE
REGIONAL OFFICES

Region	Regional Office Address	Telephone
1	911 NE 11th Ave Portland, OR 97232-4181	(503) 231-6118
2	P.O. Nox 1306 500 Gold Ave SW Room 3018 Albuquerque, NM 87103	(505) 766-2321
3	Whipple Federal Building 1 Federal Dr. Fort Snelling, MN 55111	(612) 725-3502
4	Richard B. Russell Federal Building Room 1200 75 Spring St. SW Atlanta, GA 30303	(404) 331-3588
5	One Gateway Center Suite 700 Newton Corner, MA 02158	(617) 965-5100
6	P.O. Box 25486 Denver Federal Center Denver, CO 80225	(303) 236-7920
7	1011 East Tudor Rd. Anchorage, AK 99503	(907) 786-3542
8	1849 C St. SW MS 725 - ARLSQ Washington, DC 20240	(703) 358-1801

See **Highlight A-22** for USFWS regional boundaries.

HIGHLIGHT A-13
U.S. BUREAU OF LAND MANAGEMENT STATE OFFICES

State	State Office Address	Telephone
Alaska	222 West 7th Ave #13 Anchorage, AK 99513-7599	(907) 271-5076
Arizona	3707 North 7th St. Phoenix, AZ 85011	(602) 640-5501
California	2800 Cottage Way Sacramento, CA 95825	(916) 978-4743
Colorado	2850 Youngfield St. Lakewood, CO 80215	(303) 239-3700
Eastern States Office	350 South Pickett St. Alexandria, VA 22304	(703) 461-1400
Idaho	3380 Americana Terrace Boise, ID 83706	(208) 384-3001
Montana	P.O. Box 36800 Billings, MT 59107	(406) 255-2904
Nevada	P.O. Box 1200 Reno, NV 89520-006	(702) 785-6590
New Mexico	P.O. Box 27115 Santa Fe, NM 87502-7115	(505) 438-7400
Oregon	P.O. Box 2965 Portland, OR 97208	(503) 280-7026
Utah	324 South State St. Salt Lake City, UT 84111-2303	(801) 539-4010
Wyoming	P.O. Box 1828 Cheyenne, WY 82003	(307) 775-6001

HIGHLIGHT A-14
U.S. NATIONAL FOREST SERVICE REGIONS

Region	Regional Office Address	Telephone
Northern (Region 1)	P.O. Box 7669 Missoula, MT 59807	(406) 329-3316
Rocky Mountain (Region 2)	P.O. Box 25127 Denver, CO 80225	(303) 236-9427
Southwestern (Region 3)	Federal Building 517 Gold Ave. SW Albuquerque, NM 87102	(505) 842-3300
Intermountain (Region 4)	Federal Building 324 25th St. Ogden, UT 84401	(801) 625-5352
Pacific Southwest (Region 5)	630 Sansome St. San Francisco, CA 94111	(415) 705-2870
Pacific Northwest (Region 6)	P.O. Box 3623 Portland, OR 97208	(503) 326-3625
Southern (Region 8)	1720 Peachtree Rd. NW Atlanta, GA 30367	(404) 347-4177
Eastern (Region 9)	310 West Wisconsin Ave. Room 500 Milwaukee, WI 53203	(414) 297-3693
Alaska (Region 10)	P.O. Box 21628 Juneau, AK 99802	(907) 586-8863

See **Highlight A-23** for USFS regional boundaries.

HIGHLIGHT A-15

NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM^a

Project Name	Address	Status	Phone
Ahepoo-Combahee-Edisto Basin	ACE Basin S. Carolina Wildlife & Marine Resource Center P.O. Box 12559 Charleston, SC 29412	Proposed	(803) 762-5052
Apalachicola	Apalachicola National Estuarine Research Reserve System 261 7th Street Apalachicola, FL 32320	Designated	(904) 653-8063
Chesapeake Bay (VA)	Virginia Institute of Marine Sciences P.O. Box 1346 Gloucester Point, VA 23062	Proposed	(804) 642-7135
Chesapeake Bay (MD)	Dept. of Natural Resources Tidewater Admin. Coastal Resources Division CBNERR/MD Towes State Office Bldg B-3 580 Taylor Ave. Annapolis, MD 21401	Designated	(410) 974-2784
Delaware	Delaware Estuarine Reserve 89 Kings Highway P.O. Box 1401 Dover, DE 19903	Proposed	(302) 739-3091
Elkhorn Slough	Elkhorn Slough Reserve 1700 Elkhorn Rd. Watsonville, CA 95076	Designated	(408) 728-2822
Great Bay	New Hampshire Fish and Game Department 37 Concord Rd. Durham, NH 03824	Designated	(603) 868-1095
Hudson River	Hudson River National Estuarine Research Reserve c/o Bard College P.O. Box 67 Annandale-on-Hudson, NY 12505	Designated	(914) 758-5193
Jobos Bay	Jobos Bay Estuarine Reserve P.O. Box 1170 Guayama, PR 20785	Designated	(809) 864-0105
Narragansett Bay	Narragansett Bay National Estuarine Research Reserve Department of Environmental Management 22 Hayes St. Providence, RI 02908	Designated	(401) 683-6780
North Carolina	Center for Marine Research 7205 Wrightsville Ave. Wilmington, NC 28403	Designated	(919) 256-3721

^a Note that proposed reserves are not eligible for HRS scoring but are included because they may be designated in the near future.

(continued on next page)

HIGHLIGHT A-15 (continued)
NATIONAL ESTUARINE RESERVE SYSTEM

Project Name	Address	Status	Phone
North Inlet-Winyah Bay	Baruch Marine Lab P.O. Box 1630 Georgetown, SC 29442	Proposed	(803) 546-3623
Old Woman Creek	Old Woman Creek 2514 Cleveland Rd. East Huron, OH 44839	Designated	(419) 433-4601
Padilla Bay	Padilla Bay 1043 Bayview-Edison Rd. Mt. Vernon, WA 98273	Designated	(206) 428-1558
Rookery Bay	Rookery Bay 10 Shell Island Rd. Naples, FL 33962	Designated	(813) 775-8845
St. Lawrence River Basin	St. Lawrence Eastern Ontario Commission 317 Washington St. Watertown, NY 13601	Proposed	(315) 785-2460
Sapelo Island	Department of Natural Resources P.O. Box 15 Sapelo Island, GA 31327	Designated	(912) 485-2251
South Slough	South Slough P.O. Box 5417 Charlestown, OR 97420	Designated	(503) 888-5558
Tijuana River	Tijuana River 301 Caspian Way Imperial Beach, CA 91932	Designated	(619) 575-3613
Waimanu Valley	Dept. of Land and Natural Resources Division of Forestry 7 Wildlife 567 S. King St. Room 132 Honolulu, HI 96813	Designated	(808) 587-0054
Waquoit Bay	Waquoit Bay (WBNERR) P.O. Box 3092 Waquoit, MA 02536	Designated	(508) 457-0495
Weeks Bay	Weeks Bay Estuarine Research Reserve 10936-B US Highway 98 Fairhope, AL 36532	Designated	(205) 928-9792
Wells	Wells Estuarine Reserve RR 2 Box 806 Wells, ME 04090	Designated	(207) 646-1555

HIGHLIGHT A-16
NEAR COASTAL WATERS PROGRAM EPA REGIONAL CONTACTS

EPA Region	Regional Office Address	Telephone
Headquarters	401 M Street SW Washington, DC 20036	(202) 260-5554
1	JFK Federal Building (WQE-425) Boston, MA 12203	(617) 565-4870
2	Marine and Wetland Protection Branch 26 Federal Plaza New York, NY 10278	(212) 264-5170
3	Marine and Estuary Section 841 Chestnut St. Philadelphia, PA 19104	(215) 597-9589
4	Coastal Planning Unit 345 Courtland St. NE Atlanta, GA 30365	(404) 347-1740
5	Water Division 77 West Jackson Boulevard (WQ-16J) Chicago, IL 60604	(312) 353-2079
6	Marine and Estuary Section 1445 Ross Avenue Suite 1200 Dallas, TX 75202	(214) 655-6680
9	Wetland and Coastal Planning Section 75 Hawthorne St. San Francisco, CA 94105	(415) 744-1974
10	Office of Coastal Waters 1200 6th Ave. Seattle, WA 98101	(206) 553-0966

HIGHLIGHT A-17
EPA REGIONAL CLEAN LAKES PROGRAM OFFICES

EPA Region	Regional Office Address	Telephone
1	JFK Federal Building Boston, MA 02203	(617) 565-3515
2	26 Federal Plaza New York, NY 10278	(212) 264-8708
3	841 Chestnut St. Philadelphia, PA 19107	(215) 597-3429
4	345 Courtland St. Atlanta, GA 30365	(404) 347-2126
5	77 West Jackson Boulevard Chicago, IL 60604	(312) 886-0209
6	First Interstate Bank Tower 1445 Ross Avenue Dallas, TX 75202	(214) 655-7140
7	726 Minnesota Ave. Kansas City, KS 66101	(913) 551-7500
8	One Denver Place 999 18th St, Suite 500 Denver, CO 80202-2406	(303) 293-1574
9	75 Hawthorne Street San Francisco, CA 94105	(415) 744-2018
10	1200 Sixth Ave. Seattle, WA 98101	(206) 553-6911

HIGHLIGHT A-18
NAUTICAL CHART NUMBERS FOR MARINE SANCTUARIES

National Marine Sanctuary	State or Territory	Nautical Chart Number^a
Monitor	NC	12200 13003 11009
Grays Reef	GA	11009 11480
Florida Keys	FL	111013 411 11450
Key Largo	FL	111013 411 11450
Looe Key	FL	111013 411 11450 11434 11420
Cordell Banks	CA	18640
Gulf of the Farallones	CA	18640 18680 18645
Channel Islands	CA	18740 (San Miguel Pass) 18727 (Santa Cruz Channel) 18728 (Anacapa Pass) 18729 (Santa Barbara Island) 18756 (San Nicolas Island) 18755
Fagatele Bay	American Samoa	83484

^aProvided by NOAA for ordering purposes. May represent categories of charts rather than individual charts; this will be clarified in a subsequent draft.

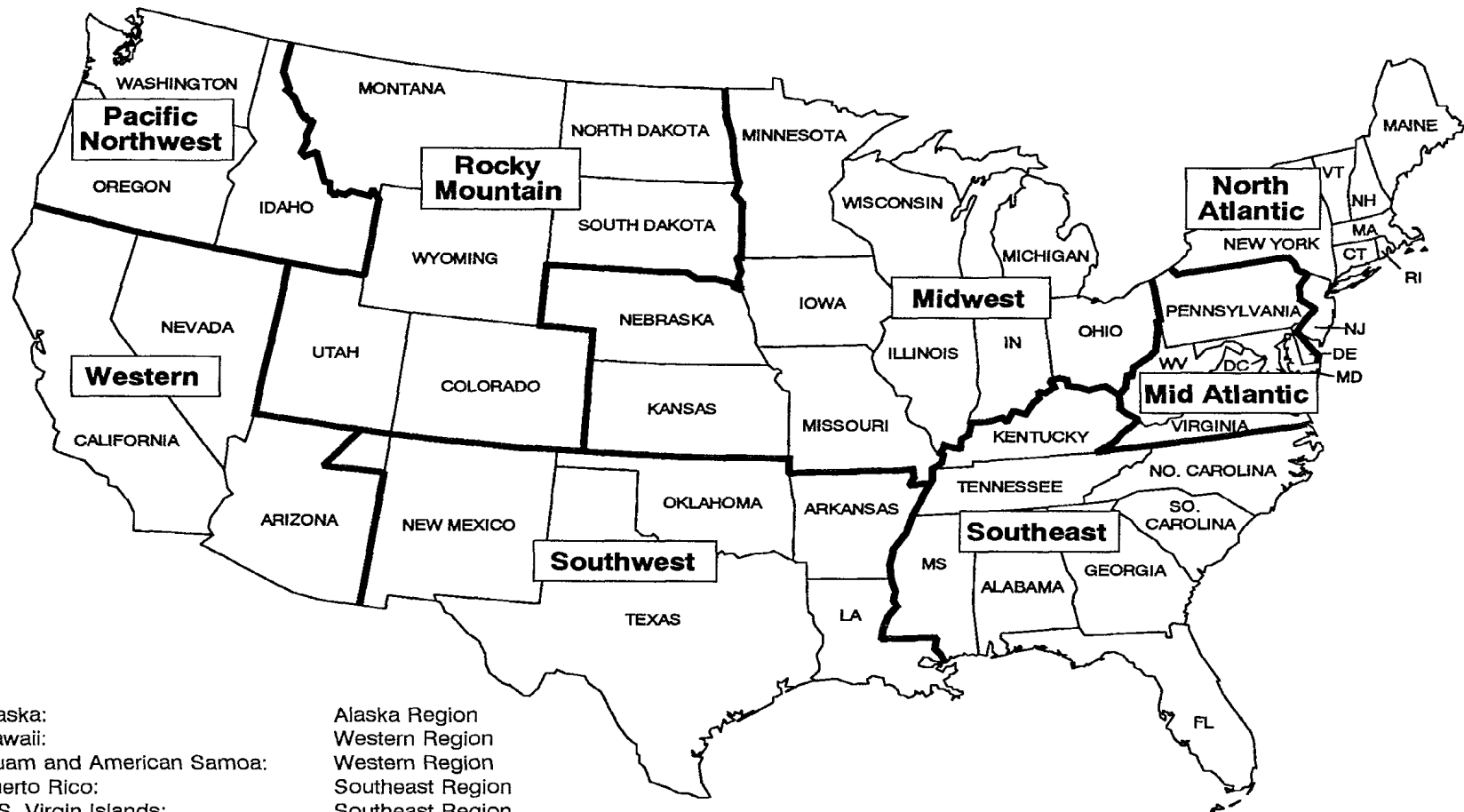
HIGHLIGHT A-19
NATIONAL ESTUARY PROGRAM INFORMATION SOURCES

Project Name (EPA Region)	Headquarters Address (all projects)	Phone Number (at Headquarters)
Buzzards Bay (1)	OCPD U.S. EPA 401 M Street SW Washington, DC 20460	(202) 260-9176
Casco Bay (1)		(202) 260-9176
Long Island Sound (1)		(202) 260-9176
Massachusetts/Cape Cod Bays (1)		(202) 260-6504
Narragansett Bay (1)		(202) 260-6466
Delaware Bay (2)		(202) 260-9799
Long Island Sound (2)		(202) 260-9176
Delaware Bay (3)		(202) 260-6466
New York/New Jersey Harbor (2)		(202) 260-6779
Delaware Inland Bays (3)		(202) 260-9799
Albemarle-Pamlico Sounds (4)		(202) 260-9137
Indian River Lagoon (4)		(202) 260-9137
Sarasota Bay (4)		(202) 260-9137
Tampa Bay (4)		(202) 260-9137
Barrataria-Terrebone Estuarine Complex (4)		(202) 260-6467
Galveston Bay (6)		(202) 260-6467
San Francisco Bay (9)		(202) 260-9038
Santa Monica Bay (9)		(202) 260-9038
Puget Sound (10)		(202) 260-9038

HIGHLIGHT A-20
EPA REGIONAL OFFICES

EPA Region	Regional Office Address	Telephone
1	JFK Federal Building Boston, MA 12203	(617) 565-3420
2	26 Federal Plaza New York, NY 10278	(212) 264-2657
3	841 Chestnut St. Philadelphia, PA 19107	(215) 597-9800
4	345 Courtland St. NE Atlanta, GA 30365	(404) 347-4727
5	77 West Jackson Boulevard Chicago, IL 60604	(312) 353-2000
6	First Interstate Bank Tower 1445 Ross Avenue Dallas, TX 75202	(214) 655-6444
7	726 Minnesota Ave Kansas City, KS 66101	(913) 551-7000
8	One Denver Place 999 18th St. Suite 500 Denver, CO 80202-2406	(303) 293-1603
9	75 Hawthorne Street San Francisco, CA 94105	(415) 744-1180
10	1200 Sixth Ave. Seattle, WA 98101	(206) 442-1200

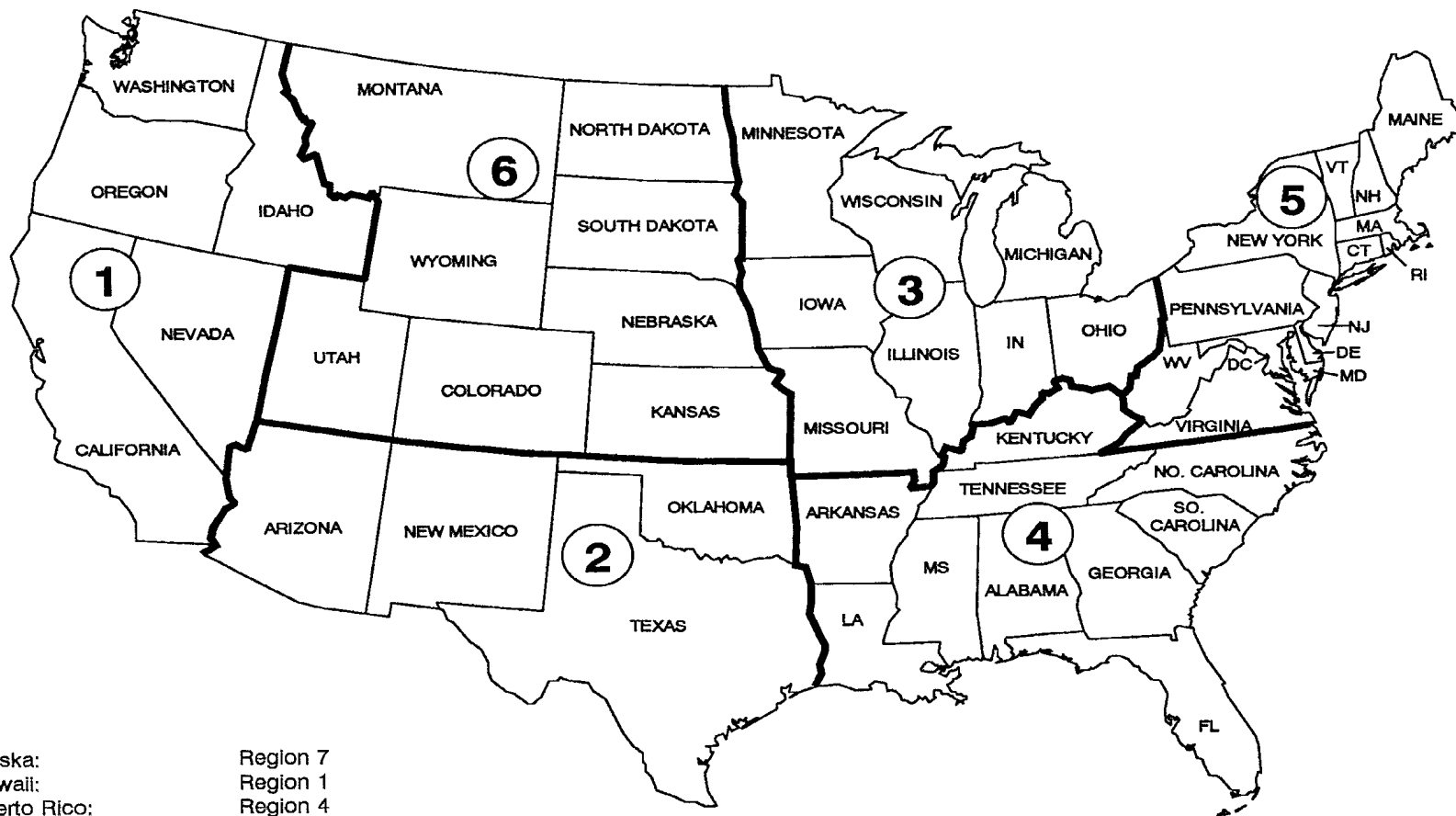
HIGHLIGHT A-21 NATIONAL PARK SERVICE REGIONAL BOUNDARIES



Alaska:	Alaska Region
Hawaii:	Western Region
Guam and American Samoa:	Western Region
Puerto Rico:	Southeast Region
U.S. Virgin Islands:	Southeast Region

Not all Park Service boundaries follow state boundaries.

HIGHLIGHT A-22 U.S. FISH AND WILDLIFE SERVICE REGIONAL BOUNDARIES



Region 7
Region 1
Region 4
Region 4

HIGHLIGHT A-23 U.S. FOREST SERVICE REGIONAL BOUNDARIES



Alaska: Alaska Region
Hawaii: Pacific Southwest Region
Puerto Rico: Southern Region
U.S. Virgin Islands: Southern Region

Not all Forest Service regional boundaries follow state boundaries.